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Definition of Specimen "Minimum Volume"

Defines the amount of specimen required to perform an assay once, including instrument and container dead space. Submitting the minimum specimen volume makes it impossible to repeat the test or perform confirmatory or perform reflex testing. In some situations, a minimum specimen volume may result in a QNS (quantity not sufficient) result, requiring a second specimen to be collected.
POLICY STATEMENTS

Animal Specimens
We do not accept animal specimens for laboratory testing.

Billing
Client—Each month you will receive an itemized invoice/statement which will indicate the date of service, patient name, CPT code, test name, and test charge. Payment terms are net 30 days. When making payment, please include our invoice number on your check to ensure proper credit to your account.

Patient—Mayo Clinic Laboratories does not routinely bill patient’s insurance; however, if you have made advanced arrangements to have Mayo Clinic Laboratories bill your patient’s insurance, please include the following required billing information: responsible party, patient’s name, current address, zip code, phone number, Social Security number, and diagnosis code. Providing this information will avoid additional correspondence to your office at some later date. Please advise your patients that they will receive a bill for laboratory services from Mayo Clinic Laboratories for any personal responsibility after insurance payment. VISA® and MasterCard® are acceptable forms of payment.

Billing—CPT Coding
It is your responsibility to determine correct CPT codes to use for billing. While this catalog lists CPT codes in an effort to provide some guidance, CPT codes listed only reflect our interpretation of CPT coding requirements and are not necessarily correct. Particularly, in the case of a test involving several component tests, this catalog attempts to provide a comprehensive list of CPT codes for all of the possible components of the test. Only a subset of component tests may be performed on your specimen. You should verify accuracy of codes listed. Where multiple codes are listed, you should select codes for tests actually performed on your specimen. MAYO CLINIC LABORATORIES ASSUMES NO RESPONSIBILITY FOR BILLING ERRORS DUE TO RELIANCE ON CPT CODES LISTED IN THIS CATALOG. For further reference, please consult the CPT Coding Manual published by the American Medical Association. If you have any questions regarding use of a code, please contact your local Medicare carrier.

Business Continuity and Contingency Planning
In the event of a local, regional, or national disaster, Mayo Clinic and Mayo Clinic Laboratories’ performing sites have comprehensive contingency plans in place in each location to ensure that the impact on laboratory practice is minimized. With test standardization between our performing sites and medical practice locations throughout the country, we have worked to ensure that patient care will not be compromised.

Cancellation of Tests
Cancellations received prior to test setup will be honored at no charge. Requests received following test setup cannot be honored. A report will be issued automatically and charged appropriately.

Chain-of-Custody
Chain-of-custody, a record of disposition of a specimen to document who collected it, who handled it, and who performed the analysis, is necessary when results are to be used in a court of law. Mayo Clinic Laboratories has developed packaging and shipping materials that satisfy legal requirements for chain-of-custody. This service is only offered for drug testing.
Compliance Policies
Mayo Clinic Laboratories is committed to compliance with applicable laws and regulations such as the Clinical Laboratory Improvement Amendments (CLIA). Regulatory agencies that oversee our compliance include, but are not limited to, the Centers for Medicare and Medicaid Services (CMS), the Food and Drug Administration (FDA), and the Department of Transportation (DOT). Mayo Clinic Laboratories develops, implements, and maintains policies, processes, and procedures throughout our organization which are designed to meet relevant requirements. We expect clients utilizing our services will ensure their compliance with patient confidentiality, diagnosis coding, anti-kick back statutes, professional courtesy, CPT-4 coding, CLIA proficiency testing, and other similar regulatory requirements. Also see “Accreditation and Licensure,” “HIPAA Compliance,” and “Reportable Disease.”

Confidentiality of Results
Mayo Clinic Laboratories is committed to maintaining confidentiality of patient information. To ensure Health Insurance Portability and Accountability Act of 1996 (HIPAA) and the College of American Pathologists (CAP) compliance for appropriate release of patient results, Mayo Clinic Laboratories has adopted the following policies:

Phone Inquiry Policy—One of the following unique identifiers will be required:

- Mayo Clinic Laboratories’ accession ID number for specimen; or
- Client account number from Mayo Clinic Laboratories along with patient name; or
- Client accession ID number interfaced to Mayo Clinic Laboratories; or
- Identification by individual that he or she is, in fact, “referring physician” identified on requisition form by Mayo Clinic Laboratories’ client

Under federal regulations, we are only authorized to release results to ordering physicians or health care providers responsible for the individual patient’s care. Third parties requesting results including requests directly from the patient are directed to the ordering facility. We appreciate your assistance in helping Mayo Clinic Laboratories preserve patient confidentiality. Provision of appropriate identifiers will greatly assist prompt and accurate response to inquiries and reporting.

Critical Values
The “Critical Values Policy” of the Department of Laboratory Medicine and Pathology (DLMP), Mayo Clinic, Rochester, Minnesota is described below. These values apply to Mayo Clinic patients as well as external clients of Mayo Clinic Laboratories. Clients should provide “Critical Value” contact information to Mayo Laboratory Inquiry to facilitate call-backs. To facilitate this process, a customized form is available at mayocliniclabs.com.

Definition of Critical Value—A critical value is defined as a value that represents a pathophysiologic state at such variance with normal (expected values) as to be life-threatening unless something is done promptly and for which some corrective action could be taken.

Abnormals are Not Considered Critical Values—Most laboratory tests have established reference ranges, which represent results that are typically seen in a group of healthy individuals. While results outside these reference ranges may be considered abnormal, “abnormal” results and “critical values” are not synonymous. Analytes on the DLMP Critical Values List represent a subgroup of tests that meet the above definition.

Action Taken when a Result is Obtained that Exceeds the Limit Defined by the DLMP Critical Values List—In addition to the normal results reporting (eg, fax, interface), Mayo Clinic Laboratories’ staff telephone the ordering physician or the client-provided contact number within 60 minutes following laboratory release of the critical test result(s). In the event that contact is not made within the 60-minute period, we continue to telephone until the designated party is reached and the result is conveyed in compliance and adherence to the CAP.
Semi-Urgent Results—Semi-Urgent Results are defined by Mayo Clinic as those infectious disease-related results that are needed promptly to avoid potentially serious health consequences for the patient (or in the case of contagious diseases, potentially serious health consequences to other persons exposed to the patient) if not acknowledged and/or treated by the physician. While not included on the Critical Values List, this information is deemed important to patient care in compliance and adherence to the CAP.

To complement Mayo Clinic Laboratories’ normal reporting mechanisms (eg, fax, interface), Mayo Clinic Laboratories’ staff will telephone results identified as significant microbiology findings to the ordering facility within 2 hours following laboratory release of the result(s). In the event that contact is not made within the 2-hour period, we will continue to telephone until the responsible party is reached and the result is conveyed. In addition, in most instances, you will see the comment **SIGNIFICANT RESULT** appear on the final report.

For information regarding the Mayo Clinic Critical Value List, contact Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700 or visit mayocliniclabs.com.

Disclosures of Results
Under federal regulations, we are only authorized to release results to ordering physicians or other health care providers responsible for the individual patient’s care. Third parties requesting results, including requests directly from the patient, are directed to the ordering facility.

Extracted Specimens
Mayo Clinic Laboratories will accept extracted nucleic acid for clinical testing, provided it is an acceptable specimen source for the ordered test, if the isolation was performed in a CLIA-certified laboratory or a laboratory meeting equivalent requirements as determined by the CAP and/or the CMS.

Fee Changes
Fees are subject to change without notification and complete pricing per accession number is available once accession number is final. Specific client fees are available by calling Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700 or by visiting mayocliniclabs.com.

Framework for Quality
“Framework for Quality” is the foundation for the development and implementation of the quality program for Mayo Clinic Laboratories. Our framework builds upon the concepts of quality control and quality assurance providing an opportunity to deliver consistent, high-quality and cost-effective service to our clients. In addition, our quality program enhances our ability to meet and exceed the requirements of regulatory/ accreditation agencies and provide quality service to our customers.

A core principle at Mayo Clinic Laboratories is the continuous improvement of all processes and services that support the care of patients. Our continuous improvement process focuses on meeting the needs of you, our client, to help you serve your patients.

“Framework for Quality” is composed of 12 “Quality System Essentials.” The policies, processes, and procedures associated with the “Quality System Essentials” can be applied to all operations in the path of workflow (eg, pre-analytical, analytical, and post-analytical). Performance is measured through constant monitoring of activities in the path of workflow and comparing performance through benchmarking internal and external quality indicators and proficiency testing.

Data generated by quality indicators drives process improvement initiatives to seek resolutions to system-wide problems. Mayo Clinic Laboratories utilizes “Failure Modes and Effects Analysis (FMEA),” “Plan Do Study Act (PDSA),” “LEAN,” “Root Cause Analysis,” and “Six Sigma” quality improvement tools to determine appropriate remedial, corrective, and preventive actions.
Quality Indicators—Mayo Clinic Laboratories produces hundreds of Key Performance Indicators for our business and operational areas, and we review them regularly to ensure that we continue to maintain our high standards. A sampling of these metrics includes:

- Pre-analytic performance indicators
  - Lost specimens*
  - On-time delivery
  - Special handling calls
  - Specimen acceptability*
  - Specimen identification*
  - Incoming defects*

- Analytic performance indicators
  - Proficiency testing
  - Quality control
  - Turnaround (analytic) times
  - Quantity-not-sufficient (QNS) specimens*

- Post-analytic performance indicators
  - Revised reports*
  - Critical value reports*

- Operational performance indicators
  - Incoming call resolution*
  - Incoming call abandon rate
  - Call completion rate
  - Call in-queue monitoring
  - Customer complaints
  - Customer satisfaction surveys

The system provides a planned, systematic program for defining, implementing, monitoring, and evaluating our services.

*Measured using Six Sigma defects per million (dpm) method.

HIPAA Compliance
Mayo Clinic Laboratories is fully committed to compliance with all privacy, security, and electronic transaction code requirements of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). All services provided by Mayo Clinic Laboratories that involve joint efforts will be done in a manner which enables our clients to be HIPAA and the College of American Pathologists (CAP) compliant.

Infectious Material
The Centers for Disease Control (CDC) in its regulations of July 21, 1980, has listed organisms and diseases for which special packaging and labeling must be applied. Required special containers and packaging instructions can be obtained from us by using the “Request for Supplies” form or by ordering from the online Supply Catalog at mayocliniclabs.com/customer-service/supplies/index.php.

Shipping regulations require that infectious substances affecting humans be shipped in a special manner. See “Infectious Material.” A copy of the regulations can be requested from the International Air Transport Association (IATA); they may be contacted by phone at 514-390-6770 or by fax at 514-874-2660.

Informed Consent Certification
Submission of an order for any tests contained in this catalog constitutes certification to Mayo Clinic Laboratories by ordering physician that: (1) ordering physician has obtained “Informed Consent” of subject patient as required by any applicable state or federal laws with respect to each test ordered; and (2) ordering physician has obtained from subject patient authorization permitting Mayo Clinic Laboratories to report results of each test ordered directly to ordering physician.
On occasion, we forward a specimen to an outside reference laboratory. The laws of the state where the reference laboratory is located may require written informed consent for certain tests. Mayo Clinic Laboratories will request that ordering physician pursue and provide such consent. Test results may be delayed or denied if consent is not provided.

**Non-Biologic Specimens**

Due to the inherent exposure risk of non-biologic specimens, their containers, and the implied relationship to criminal, forensic, and medico-legal cases, Mayo Clinic Laboratories does not accept nor refer non-biologic specimen types. Example specimens include: unknown solids and liquids in the forms of pills, powder, intravenous fluids, or syringe contents.

**Patient Safety Goals**

One of The Joint Commission National Patient Safety goals for the Laboratory Services Program is to improve the accuracy of patient identification by using at least 2 patient identifiers when providing care, treatment, or services.

Mayo Clinic Laboratories uses multiple patient identifiers to verify the correct patient is matched with the correct specimen and the correct order for the testing services. As a specimen is received at Mayo Clinic Laboratories, the client number, patient name, and patient age date of birth are verified by comparing the labels on the specimen tube or container with the electronic order and any paperwork (batch sheet or form) which may accompany the specimen to be tested. When discrepancies are identified, Mayo Laboratory Inquiry will call the client to verify discrepant information to assure Mayo Clinic Laboratories is performing the correct testing for the correct patient. When insufficient or inconsistent identification is submitted, Mayo Clinic Laboratories will recommend that a new specimen be obtained, if feasible.

In addition, Anatomic Pathology consultation services require the Client Pathology Report. The pathology report is used to match the patient name, patient age and/or date of birth, and pathology case number. Since tissue blocks and slides have insufficient space to print the patient name on the block, the pathology report provides Mayo Clinic Laboratories another mechanism to confirm the patient identification with the client order and labels on tissue blocks and slides.

**Parallel Testing**

Parallel testing may be appropriate in some cases to re-establish patient baseline results when converting to a new methodology at Mayo Clinic Laboratories. Contact your Regional Manager at 800-533-1710 or 507-266-5700 for further information.

**Proficiency Testing**

We are a College of American Pathologists (CAP)-accredited, CLIA-licensed facility that voluntarily participates in many diverse external and internal proficiency testing programs. It is Mayo Clinic Laboratories’ expectation that clients utilizing our services will adhere to CLIA requirements for proficiency testing (42 CFR 493.801), including a prohibition on discussion about samples or results and sharing of proficiency testing materials with Mayo Clinic Laboratories during the active survey period.

Mayo Clinic Laboratories’ proficiency testing includes participation in CMS-approved programs. Mayo Clinic Laboratories also performs alternative assessment using independent state, national, and international programs when proficiency testing is not available. Mayo Clinic Laboratories also conducts comparability studies to ensure the accuracy and reliability of patient testing, when necessary. We comply with the regulations set forth in Clinical Laboratory Improvement Amendments (CLIA-88), the Occupational Safety and Health Administration (OSHA), or the Centers for Medicare & Medicaid Services (CMS).

It is Mayo Clinic Laboratories’ expectation that clients utilizing our services will adhere to CLIA requirements for proficiency testing including a prohibition on discussion about samples or results and sharing of proficiency testing materials.
testing materials with Mayo Clinic Laboratories during the active survey period. Referring of specimens is acceptable for comparison purposes when an approved proficiency-testing program is not available for a given analyte.

**Radioactive Specimens**
Specimens from patients receiving radioactive tracers or material should be labeled as such. All incoming shipments arriving at Mayo Clinic Laboratories are routed through a detection process in receiving to determine if the samples have any levels of radioactivity. If radioactive levels are detected, the samples are handled via an internal process that assures we do not impact patient care and the safety of our staff. This radioactivity may invalidate the results of radioimmunoassays (RIA).

**Record Retention**
Mayo Clinic Laboratories retains all test requisitions and patient test results at a minimum for the retention period required to comply with and adhere to the CAP. A copy of the original report can be reconstructed including reference ranges, interpretive comments, flags, and footnotes with the source system as the Department of Laboratory Medicine’s laboratory information system.

**Referral of Tests to Another Laboratory**
Mayo Clinic Laboratories forwards tests to other laboratories as a service to its clients. This service should in no way represent an endorsement of such test or referral laboratory or warrant any specific performance for such test. Mayo Clinic Laboratories will invoice for all testing referred to another laboratory at the price charged to Mayo Clinic Laboratories. In addition, Mayo Clinic Laboratories will charge an administrative fee per test for such referral services.

**Reflex Testing**
Mayo Clinic Laboratories identifies tests that reflex when medically appropriate. In many cases, Mayo Clinic Laboratories offers components of reflex tests individually as well as together. Clients should familiarize themselves with the test offerings and make a decision whether to order a reflex test or an individual component. Clients, who order a reflex test, can request to receive an “Additional Testing Notification Report” which indicates the additional testing that has been performed. This report will be faxed to the client. Clients who wish to receive the “Additional Testing Notification Report” should contact their Regional Manager or Regional Service Representative.

**Reportable Disease**
Mayo Clinic Laboratories, in compliance with and adherence to the College of American Pathologists (CAP) Laboratory General Checklist (CAP GEN. 20373) strives to comply with laboratory reporting requirements for each state health department regarding reportable disease conditions. We report by mail, fax, and/or electronically, depending upon the specific state health department regulations. Clients shall be responsible for compliance with any state specific statutes concerning reportable conditions, including, but not limited to, birth defects registries or chromosomal abnormality registries. This may also include providing patient address/demographic information. Mayo Clinic Laboratories’ reporting does not replace the client or physician responsibility to report as per specific state statues.

**Request for Physician Name and Number**
Mayo Clinic Laboratories endeavors to provide high quality, timely results so patients are able to receive appropriate care as quickly as possible. While providing esoteric reference testing, there are times when we need to contact the ordering physician directly. The following are 2 examples:

When necessary to the performance of a test, the ordering physician’s name and phone number are requested as part of “Specimen Required.” This information is needed to allow our physicians to make timely consultations or seek clarification of requested services. If this information is not provided at the time of specimen receipt, we will call you to obtain the information. By providing this information up front, delays in patient care are avoided.
In some situations, additional information from ordering physician is necessary to clarify or interpret a test result. At that time, Mayo Clinic Laboratories will request physician’s name and phone number so that one of our staff can consult with the physician.

We appreciate your rapid assistance in supplying us with the ordering physician’s name and phone number when we are required to call. Working together, we can provide your patients with the highest quality testing services in the shortest possible time.

**Special Handling**

Mayo Clinic Laboratories serves as a reference laboratory for clients around the country and world. Our test information, including days and time assays are performed as well as analytic turnaround time, is included under each test listing in the Test Catalog on mayocliniclabs.com. Unique circumstances may arise with a patient resulting in a physician request that the specimen or results receive special handling. There are several options available. These options can only be initiated by contacting Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700 and providing patient demographic information.

There is a nominal charge associated with any special handling.

- **Hold:** If you would like to send us a specimen and hold that specimen for testing pending initial test results performed at your facility, please call Mayo Laboratory Inquiry. We will initiate a hold and stabilize the specimen until we hear from you.

- **Expedite:** If you would like us to expedite the specimen to the performing laboratory, you can call Mayo Laboratory Inquiry and request that your specimen be expedited. Once the shipment is received in our receiving area, we will deliver the specimen to the performing laboratory for the next scheduled analytic run. We will not set up a special run to accommodate an expedite request.

- **STAT:** In rare circumstances, STAT testing from the reference laboratory may be required for patients who need immediate treatment. These cases typically necessitate a special analytic run to turn results around as quickly as possible. To arrange STAT testing, please have your pathologist, physician, or laboratory director call Mayo Laboratory Inquiry. He/she will be connected with one of our medical directors to consult about the patient’s case. Once mutually agreed upon that there is a need for a STAT, arrangements will be made to assign resources to run the testing on a STAT basis when the specimen is received.

**Specimen Identification Policy**

In compliance with and adherence to the CAP and the Joint Commission’s 2008 Patient Safety Goals (1A), Mayo Clinic Laboratories’ policy states that all specimens received for testing must be correctly and adequately labeled to assure positive identification. Specimens must have 2 person-specific identifiers on the patient label. Person-specific identifiers may include: accession number, patient’s first and last name, unique identifying number (eg, medical record number), or date of birth. Specimens are considered mislabeled when there is a mismatch between the person-specific identifiers on the specimen and information accompanying the specimen (eg, computer system, requisition form, additional paperwork).

When insufficient or inconsistent identification is submitted, Mayo Clinic Laboratories will recommend that a new specimen be obtained, if feasible.

**Specimen Rejection**

All tests are unique in their testing requirements. To avoid specimen rejection or delayed turnaround times, please check the “Specimen Required” field within each test. You will be notified of rejected or problem specimens upon receipt.

Please review the following conditions prior to submitting a specimen to Mayo Clinic Laboratories:

- Full 24 hours for timed urine collection
• pH of urine
• Lack of hemolysis/lipemia
• Specimen type (plasma, serum, whole blood, etc.)
• Specimen volume
• Patient information requested
• Proper identification of patient/specimen
• Specimen container (metal-free, separation gel, appropriate preservative, etc.)
• Transport medium
• Temperature (ambient, frozen, refrigerated)

Specimen Volume
The “Specimen Required” section of each test includes 2 volumes - preferred volume and minimum volume. Preferred volume has been established to optimize testing and allows the laboratory to quickly process specimen containers, present containers to instruments, perform test, and repeat test, if necessary. Many of our testing processes are fully automated; and as a result, this volume allows hands-free testing and our quickest turnaround time (TAT). Since patient values are frequently abnormal, repeat testing, dilutions, or other specimen manipulations often are required to obtain a reliable, reportable result. Our preferred specimen requirements allow expeditious testing and reporting.

When venipuncture is technically difficult or the patient is at risk of complications from blood loss (eg, pediatric or intensive care patients), smaller volumes may be necessary. Specimen minimum volume is the amount of sample necessary to provide a clinical relevant result as determined by the Testing Laboratory.

When patient conditions do not mandate reduced collection volumes, we ask that our clients submit preferred volume to facilitate rapid, cost-effective, reliable test results. Submitting less than preferred volume may negatively impact quality of care by slowing TAT, increasing the hands-on personnel time (and therefore cost) required to perform test.

Mayo Clinic Laboratories makes every possible effort to successfully test your patient’s specimen. If you have concerns about submitting a specimen for testing, please call Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700. Our staff will discuss the test and specimen you have available. While in some cases specimens are inadequate for desired test, in other cases, testing can be performed using alternative techniques.

Supplies
Shipping boxes, specimen vials, special specimen collection containers, and request forms are supplied without charge. Supplies can be requested using one of the following methods: use the online ordering functionality available at mayocliniclabs.com/supplies or call Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700.

Test Classifications
Analytical tests offered by Mayo Clinic Laboratories are classified according to the FDA labeling of the test kit or reagents and their usage. Where appropriate, analytical test listings contain a statement regarding these classifications, test development, and performance characteristics.

Test Development Process
Mayo Clinic Laboratories serves patients and health care providers from Mayo Clinic, Mayo Health System, and our reference laboratory clients worldwide. We are dedicated to providing clinically useful, cost-effective testing strategies for patient care. Development, validation, and implementation of new and improved laboratory methods are major components of that commitment.

Each assay utilized at Mayo Clinic, whether developed on site or by others, undergoes an extensive validation and performance documentation period before the test becomes available for clinical use. Validations follow a standard protocol that includes:

- Accuracy
• Precision
• Sensitivity
• Specificity and interferences
• Reportable range
• Specimen stability
• Specimen type comparisons, if applicable
• Urine preservative studies: stability at ambient, refrigerated, and frozen temperatures and with 7 preservatives; at 1, 3, and 7 days
• Comparative evaluation with current and potential methods, if applicable
• Reference intervals: reference intervals provided by Mayo Clinic Laboratories are derived from studies performed in our laboratories or adopted from the manufacturer package insert after internal verification. When reference intervals are obtained from other sources, the source is indicated in the “Reference Values” field.
• Workload recording
• Limitations of the assay
• Clinical utility and interpretation: written by Mayo Clinic medical experts, electronically available (MayoAccess™)

Test Result Call-Backs
Results will be phoned to a client when requested from the client (either on Mayo Clinic Laboratories’ request form or from a phone call to Mayo Clinic Laboratories from the client).

Time-Sensitive Specimens
Please contact Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700 prior to sending a specimen for testing of a time-sensitive nature. Relay the following information: facility name, account number, patient name and/or Mayo Clinic Laboratories’ accession number, shipping information (ie, courier service, FedEx®, etc.), date to be sent, and test to be performed. Place specimen in a separate Mayo Clinic Laboratories’ temperature appropriate bag. Please write “Expedite” in large print on outside of bag.

Turnaround Time (TAT)
Mayo Clinic Laboratories’ extensive test menu reflects the needs of our own health care practice. We are committed to providing the most expedient TAT possible to improve diagnosis and treatment. We consider laboratory services as part of the patient care continuum wherein the needs of the patient are paramount. In that context, we strive to fulfill our service obligations. Our history of service and our quality metrics will document our ability to deliver on all areas of service including TAT.

Mayo Clinic Laboratories defines TAT as the analytical test time (the time from which a specimen is received at the testing location to time of result) required. TAT is monitored continuously by each performing laboratory site within the Mayo Clinic Department of Laboratory Medicine and Pathology. For the most up-to-date information on TAT for individual tests, please visit us at mayocliniclabs.com or contact Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700.

Unlisted Tests
Mayo Clinic Laboratories does not list all available test offerings in the paper catalog. New procedures are developed throughout the year; therefore, some tests are not listed in this catalog. Although we do not usually accept referred tests of a more routine type, special arrangements may be made to provide your laboratory with temporary support during times of special need such as sustained instrumentation failure. For information about unlisted tests, please call Mayo Laboratory Inquiry at 800-533-1710 or 507-266-5700.
1,25-Dihydroxyvitamin D, Serum

Specimen Requirements: Patient Preparation: Fasting (4-hour preferred but not required) Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: At least 1.5 mL

Specimen Minimum Volume: 0.7 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 28 days
Ambient 7 days

CPT Code Information: 82652

11-Deoxycorticosterone, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: Morning (8 a.m.) specimen is preferred.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days
Ambient 7 days

CPT Code Information: 82633

11-Deoxycortisol, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: Morning (8 a.m.) specimen is preferred.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

CPT Code Information: 82634

11-Desoxycortisol (Specific Compound S)

Specimen Requirements: Draw blood in a plain, red-top tube(s). Separate within one hour and send 1 mL of serum frozen in a plastic vial. Note: 1. Serum gel tube is acceptable, but must pour off into a plastic screw cap vial and freeze. 2. Minimum volume does not permit for repeat analysis.

Specimen Minimum Volume: Pediatric minimum only: 0.2 mL Note: Does not permit repeat analysis.
Transport Temperature:
Serum Frozen

CPT Code Information: 82634

THCMX
62744
11-nor-Delta-9-Tetrahydrocannabinol-9-Carboxylic Acid (Carboxy-THC) Confirmation, Chain of Custody, Meconium

Specimen Requirements: Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required. Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain of custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

Specimen Minimum Volume: 0.3 g (approximately 1/4 teaspoon)

Transport Temperature:
Meconium Frozen (preferred) 28 days
Refrigerated 21 days
Ambient 14 days

CPT Code Information: 80349; G0480 (if appropriate);

THCM
84284
11-nor-Delta-9-Tetrahydrocannabinol-9-Carboxylic Acid (Carboxy-THC) Confirmation, Meconium

Specimen Requirements: Supplies: Stool container. Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

Specimen Minimum Volume: 0.3 g (approximately 1/4 teaspoon)

Transport Temperature:
Meconium Frozen (preferred) 28 days
Refrigerated 21 days
Ambient 14 days

CPT Code Information: 80349; G0480 (if appropriate);

P1433
82528
14-3-3 Protein, Spinal Fluid

Specimen Requirements: Collection Container/Tube: Sterile vial Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Obtain aliquot from second collection vial. 2. Hemolyzed specimens will give false-positive results. Specimens should be centrifuged to remove any red cells before shipping. The test will be canceled if there is any level of hemolysis present. 3. Immediately place aliquot on ice. Additional Information: 1. Specimens that have not been kept refrigerated, or which have been tested for other analytes previously, may give a false-positive result. 2. Separate specimens should be submitted when multiple tests are ordered. This will reduce the risk of test cancellation due to stability problems.
Specimen Minimum Volume: 1 mL CSF on ice; Pediatric or minimum volume: 0.6 mL CSF on ice

Transport Temperature:
CSF Refrigerated (preferred) 7 days
Frozen 90 days

CPT Code Information: 83520

17OHP 81151
17-Hydroxypregnenolone, Serum

Specimen Requirements: Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 28 days
Refrigerated 28 days

CPT Code Information: 84143

OHPG 9231
17-Hydroxyprogesterone, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 0.6 mL Additional Information: Indicate patient's age and sex.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 28 days
Ambient 7 days

CPT Code Information: 83498

GLIOF 35272
1p/19q Deletion in Gliomas, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Six consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Specimen Minimum Volume: Four consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

Transport Temperature:
Tissue Ambient
(preferred)
Refrigerated
**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**2,3-Bisphosphoglycerate Mutase, Full Gene Sequencing Analysis**

**Specimen Requirements:** Submit only 1 of the following specimens: Patient Preparation: Bone marrow transplants preclude accurate germline and mutation analysis. Please inform the laboratory if this patient has undergone bone marrow transplantation. On rare occasions transfusion of blood products can preclude accurate mutation analysis and results should be interpreted with caution if performed after recent transfusion (within 4 months). Specimen Type: Peripheral blood Collection Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top), Heparin (green top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in the original tube. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from whole blood Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood and provide indication of volume and concentration of the DNA Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies 7 days

**CPT Code Information:** 81479-Unlisted Molecular Pathology procedure

**2,3-Dinor-11Beta-Prostaglandin F2 Alpha, Urine**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: 24-hour urine collection Supplies: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative preferred. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. Acceptable: Random collection Supplies: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative preferred.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days

Frozen 30 days

Ambient 8 hours

**CPT Code Information:** 84150

**21-Deoxycortisol, Serum**

**CPT Code Information:**
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: Morning (8 a.m.) specimen is preferred.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days

- Frozen 21 days
- Ambient 14 days

**CPT Code Information:** 82542

**OH21 81970**

**21-Hydroxylase Antibodies, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.19 mL

**Transport Temperature:**
Serum Frozen (preferred) 14 days

- Refrigerated 7 days

**CPT Code Information:** 83519

**CYPZ 37445**

**21-Hydroxylase Gene (CYP21A2), Full Gene Analysis**

**Specimen Requirements:** Specimen Type: Whole Blood Container/Tube: Preferred: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Prenatal Specimens Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Amniotic Fluid: 10 mL Blood: 1 mL Chorionic Villi: 5 mg

**Transport Temperature:**
Varies Ambient (preferred)

- Frozen
- Refrigerated

**CPT Code Information:** 81405-CYP21A2 (cytochrome P450, family 21, subfamily A, polypeptide2) (eg, steroid 21-hydroxylase isoform, congenital adrenal hyperplasia), full gene sequence ; 81402-CYP21A2 (cytochrome P450, family 21, subfamily A, polypeptide2) (eg, congenital adrenal hyperplasia, 21-hydroxylase deficiency), common variants (eg, IVS2-13G, P30L, I172N, exon 6 mutation cluster [I235N, V236E, M238K], V281L, L307FfsX6, Q318X, R356W, P453S, G110VfsX21, 30-kb deletion variant); ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test;
22q11.2 Deletion/Duplication, FISH

**Specimen Requirements:** Submit only 1 of the following specimens: Supplies:
- Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20-25 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. 3. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 4. Fill remaining space with packing material. Additional Information: 1. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 2. Bloody specimens are undesirable. 3. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 4. Results will be reported and also telephoned or faxed, if requested. Supplies: Hank's Solution (T132) Specimen Type: Autopsy Container/Tube: Sterile container with sterile Hank's solution (T132), Ringer's solution, or normal saline Specimen Volume: 1 cm(3) biopsy specimen of muscle/fascia from the thigh Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Supplies: CVS Media (RPMI) and Small Dish (T095) Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-25 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer chorionic villi to a Petri dish containing transport medium (Such as CVS Media (RPMI) and Small Dish [T095]). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Type: Fixed cell pellet Container/Tube: Sterile container with a 3:1 fixative (methanol:glacial acetic acid) Specimen Volume: Entire specimen Supplies: Hank's Solution (T132) Specimen Type: Products of conception or stillbirth Container/Tube: Sterile container with sterile Hank's solution (T132), Ringer's solution, sterile RPMI transport media, or normal saline Specimen Volume: 1 cm(3) of placenta (including 20 mg of chorionic villi) and a 1-cm(3) biopsy specimen of muscle/fascia from the thigh Collection Instructions If a fetus cannot be specifically identified, collect villus material or tissue that appears to be of fetal origin. Additional Information: Do not send entire fetus. Supplies: Hank's Solution (T132) Specimen Type: Skin biopsy Container/Tube: Sterile container with sterile Hank's solution (T132), Ringer's solution, or normal saline Specimen Volume: 1-cm(3) biopsy specimen of muscle/fascia from the thigh Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis.

**Specimen Minimum Volume:**
- Amniotic Fluid: 5 mL
- Autopsy, Skin Biopsy: 4 mm
- Blood: 2 mL
- Chorionic Villi: 5 mg
- Fixed Cell Pellet: 1 pellet
- Products of Conception: 1 cm(3)

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88273 w/modifier 52-Chromosomal in situ hybridization, less than 10 cells (if
25-Hydroxyvitamin D2 and D3, Serum

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel
- **Acceptable:** Red top

**Specimen Volume:** 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 82306

25-Hydroxyvitamin D:24,25-Dihydroxyvitamin D Ratio, Serum

**Specimen Requirements:**
- **Container/Tube:** Preferred: Red top

**Specimen Volume:** 3 mL

**Collection Instructions:** Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 82306; 82542;

3-Methoxytyramine, 24 Hour, Urine

**Specimen Requirements:**
- **Patient Preparation:** Tricyclic antidepressants, labetalol, and sotalol medications may elevate levels of catecholamines producing results that cannot be interpreted. If clinically feasible, it is optimal to discontinue these medications at least 1 week before collection. Levodopa (Sinemet) medication will cause false-positive results. For advice on assessing the risk of removing patients from these medications and alternatives, you may consider consultation with a specialist in endocrinology or hypertension. Supplies: Urine Tubes, 10 mL (T068)

**Submission Container/Tube:** Plastic urine tube (T068)

**Specimen Volume:** 10 mL

**Collection Instructions:**
1. Complete 24-hour urine collections are preferred, especially for patients with episodic hypertension; ideally the collection should begin at the onset of a "spell."
2. Collect urine for 24 hours.
3. Add 10 g (pediatric: 3 g) of boric acid or 25 mL (pediatric: 15 mL) of 50% acetic acid as preservative at start of collection. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
F5NUL 5'Nucleotidase

**CPT Code Information:** 82542

**F5NUL**

**5'Nucleotidase**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: SST or Red Specimen Volume: 1 mL Collection Instructions: Draw blood in a serum gel tube(s), plain red-top tube(s) is acceptable. Spin down and send 1 mL of serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 14 days
- Ambient 4 hours

**CPT Code Information:** 83915

MTHAC 5,10-Methylenetetrahydrofolate Reductase A1298C, Mutation, Blood

**CPT Code Information:** 81291-MTHFR (5,10-methylenetetrahydrofolate reductase) (eg, hereditary hypercoagulability) gene analysis, common variants (eg, 677T, 1298C)

**MTHAC**

**5,10-Methylenetetrahydrofolate Reductase A1298C, Mutation, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Lavender top (EDTA) or blue top (sodium citrate) Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL blood in a 3 mL ACD tube

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days
- Frozen 14 days
- Refrigerated 14 days

**MTHP 5,10-Methylenetetrahydrofolate Reductase C677T and A1298C Mutations, Blood**

**CPT Code Information:** 81291-MTHFR (5,10-methylenetetrahydrofolate reductase) (eg, hereditary hypercoagulability) gene analysis, common variants (eg, 677T, 1298C)

**MTHP**

**5,10-Methylenetetrahydrofolate Reductase C677T and A1298C Mutations, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Lavender top (EDTA) or blue top (sodium citrate) Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL blood in a 3 mL ACD tube

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days
- Frozen 14 days
MTHFR 5,10-Methylenetetrahydrofolate Reductase C677T, Mutation, Blood

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Lavender top (EDTA) or blue top (sodium citrate) Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL in a 3-mL ACD tube

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days
- Frozen 14 days
- Refrigerated 14 days

**CPT Code Information:** 81291-MTHFR (5,10-methylenetetrahydrofolate reductase) (eg, hereditary hypercoagulability) gene analysis, common variants (eg, 677T, 1298C)

FLUC 5-Flucytosine, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: 1. Serum for a peak level should be drawn 1 to 2 hours after oral dose or 30 minutes after intravenous infusion. Trough specimens should be drawn immediately prior to next scheduled dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80299

F5HAR 5-HIAA (5-Hydroxyindoleacetic Acid), Random Urine

**Specimen Requirements:** 10 mL random urine, after collection add 6N HCL to maintain a pH below 3. Submit in a sterile screw capped container shipped ambient. Note: 1. Urine without preservative is acceptable if pH is below 6 and shipped frozen. 2. Dietary Instructions: - Patient should avoid food high in indoles: avocado, banana, tomato, plum, walnut, pineapple, and eggplant. - Patient should also avoid tobacco, tea and coffee three days prior to specimen collection.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Ambient (preferred) 7 days
- Frozen 30 days
**5-Hydroxyindoleacetic Acid (5-HIAA), 24 Hour, Urine**

**Specimen Requirements:**

- **Patient Preparation:**
  1. Some medications (see below) could interfere with test results. The ordering provider should decide if any medications should be stopped and when they should be restarted.
  2. For 48 hours before patients start their urine collection and during the 24 hours they collect urine: Limit the following to 1 serving per day:
     - Fruits
     - Vegetables
     - Nuts
     - Caffeinated beverages or foods
   If clinically feasible, discontinue the following medications at least 48 hours before specimen collection:
     - Acetaminophen (Tylenol or generic versions)
     - Aspirin
     - Antihistamines
     - Cough syrups
     - Cold and flu medications

- **Supplies:** Urine Tubes, 10 mL (T068); Container/Tube: Plastic, 10-mL urine tube (T068)

- **Specimen Volume:** 5 mL

- **Collection Instructions:**
  1. Collect a 24-hour urine specimen.
  2. Add 25 mL of 50% acetic acid as preservative at start of collection. Use 15 mL of 50% acetic acid for children <5 years old.

- **Additional Information:** See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 56 days
- Frozen 365 days

**CPT Code Information:**

- 82570/other source; 83497/Hydroxyindoleacetic acid, 5-(HIAA);

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**5-Methyltetrahydrofolate**

**Specimen Requirements:**

- **Medical Neurogenetics collection kit (T657) required. Each collection kit contains 5 microcentrifuge tubes.**
  1. **COLLECTION PROTOCOL:**
     1. CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes:
        - Tube 1: 0.5 mL
        - Tube 2: 1.0 mL
        - Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity)
        - Tube 4: 1.0 mL
        - Tube 5: 1.0 mL - If sample's not blood contaminated, the tubes should be placed on dry ice at bedside - If sample's are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen - Store samples at -80 until they can be shipped
  2. Complete Medical Neurogenetics, LLC request form. Include test required, sample date and date of birth.
  3. Label tubes with patient name and ID number, leaving the tube number viewable.
  4. Place samples inside a specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag.
  5. Ship samples frozen on dry ice.

**Transport Temperature:**

- CSF Frozen

**CPT Code Information:**

- 82542

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**6-Monoacetylmorphine (6-MAM) Confirmation, Chain of Custody, Meconium**

**Specimen Requirements:**

- **Supplies:** Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required.

**Specimen Volume:** 1 g (approximately 1 teaspoon)

**Collection Instructions:** Collect entire random meconium specimen.

**Additional Information:**

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Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen that arrives with a broken seal does not meet the chain of custody requirements.

**6MAMU**

6-Monoacetylmorphine (6-MAM) Confirmation, Urine

**Specimen Requirements:** Supplies: Urine Container, 60 mL (T313) Collection Container/Tube: Plastic, 60-mL urine container (T313) Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure.

**Specimen Minimum Volume:** 2.1 mL

**Transport Temperature:**
- Frozen: 14 days
- Ambient: 72 hours

**CPT Code Information:** 80356; G0480 (if appropriate);

**6MAMX**

6-Monoacetylmorphine (6-MAM), Chain of Custody, Urine

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.1 mL

**Transport Temperature:**
- Frozen: 14 days
- Ambient: 72 hours

**CPT Code Information:** 80356; G0480 (if appropriate);

**6MAMM**

6-Monoacetylmorphine (6-MAM), Confirmation, Meconium

**Specimen Requirements:** Supplies: Stool container, Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: 1. Collect entire random meconium specimen. 2. Send specimen frozen. When refrigerated, a significant percentage of 6-MAM will convert to morphine in less than 24 hours.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
Meconium Frozen 14 days

**CPT Code Information:** 80356; G0480 (if appropriate);

**F68KD**

**68kD (hsp-70)**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 2.0 mL

**Transport Temperature:**
- Serum Frozen (preferred) 365 days
  - Refrigerated 5 days
  - Ambient 48 hours

**CPT Code Information:** 84182

**7AC4**

**7AC4, Bile Acid Synthesis, Serum**

**Specimen Requirements:** Patient Preparation: 1. Patient must be fasting for at least 12 hours; fasting morning specimen is preferred. 2. Patient should not be taking bile acid sequestrants or statins.

Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 90 days
  - Refrigerated 72 hours
  - Ambient 24 hours

**CPT Code Information:** 82542

**A1R**

**A1 Antigen Subtype**

**Specimen Requirements:** Container/Tube: Pink top (EDTA) Submission Container/Tube: Original tube Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** Pediatric: 2 mL blood in 6 mL EDTA tube

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
  - Ambient 72 hours

**CPT Code Information:** 86905

**G111**

**Abnormal Transferrin CDG Panel (Bill Only)**
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81405 x2; 81406; 81479;

**ABONR**

ABO/Rh Newborn, RBC

**Specimen Requirements:** Container/Tube: EDTA Micro tube Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 10 days

Ambient 4 days

**CPT Code Information:** 86900-ABO Typing; 86901-Rh Typing;

**ABOMR**

ABOrh, RBC

**Specimen Requirements:** Container/Tube: Pink top (EDTA) Specimen Volume: 6 mL

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 10 days

Ambient 4 days

**CPT Code Information:** 86900-ABO; 86901-Rh;

**ACAC**

Acacia, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**ACARP**

Acanthamoeba species Molecular Detection, PCR, Ocular

**Specimen Requirements:** The preferred specimen for Acanthamoeba PCR from an ocular source is corneal scraping or biopsy. Submit only 1 of the following specimens: Specimen Type: Tissue: Fresh Sources: Ocular Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Submit tissue in a sterile container with 1 mL of sterile saline, minimal essential media (MEM), or viral transport media. Specimen Type: Tissue: Formalin-fixed paraffin-embedded (FFPE) Sources: Ocular Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Cut
tissue into five, 10-micron sections and place in a sterile container. Specimen Type: Scrapings/Swabs
Sources: Eye, ocular, cornea Container/Tube: Sterile container Specimen Volume: 1 mL Collection
Instructions: 1. Collect corneal scrapings using a scalpel or other sharp device to remove the outer layer
of cells from the eye. 2. Swish the collection device in 1 mL of sterile saline, minimal essential media
(MEM), or viral transport media. 3. Remove the collection device from the collection container before
submitting to the lab. 4. Specimens containing scalpel blades will be canceled. Additional Information:
Swabs are not the preferred specimen for this test and may yield false-negative results. Specimen Type:
Contact lenses Container/Tube: Sterile container Specimen Volume: Entire collection Collection
Instructions: 1. Place entire contact lens in a sterile container with 1 mL sterile saline, contact lens
solution, viral transport media, or minimal essential media (MEM). 2. Right and Left lenses must be
submitted individually using multiple sterile containers or in the original contact lens case. Multiple
orders must be created. 3. Indicate Right or Left in the specimen source. Specimen Type: Contact lens
solution Container/Tube: Sterile container Specimen Volume: 1 mL solution Specimen Type: Contact
lens cases without lenses Container/Tube: Sterile container Specimen Volume: 1 mL solution or entire
case Additional Information: 1. Depending on the type of case submitted, it may be necessary to test
right and left chambers individually. Multiple orders must be created. 2. Indicate Right or Left in the
specimen source.

**Specimen Minimum Volume:**
- Tissue: 5 mm biopsy
- Scrapings: 0.5 mL
- Contact Lens Solution: 1 mL

**Transport Temperature:**
Varies Refrigerated 7 days

**CPT Code Information:** 87798

### ACAR

**ACAR**

**82850**

**ACARUS SIRO, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### FACET

**FACET**

**57707**

**ACETAMINOPHEN (TYLENOL, DATRIL), URINE**

**Specimen Requirements:** Collect 10 mL random urine without preservatives. Ship refrigerated in
a plastic container.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 72 hours
**Acetaminophen, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top

**Volume:** 0.5 mL

**Collection Instructions:**
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 180 days
- Ambient 24 hours

**CPT Code Information:** 80307

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**Acetoacetate, Serum**

**Specimen Requirements:**
- Specimen Type: Serum
- Container/Tube: Red
- Volume: 3 mL

**Draw blood in a plain, red-top tube(s). Serum gel tube is not acceptable. Spin down and send 3 mL of serum frozen in a plastic vial.**

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 29 days
- Frozen 29 days
- Refrigerated 4 days

**CPT Code Information:** 82010

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**Acetylcholine Receptor (Muscle AChR) Binding Antibody, Serum**

**Specimen Requirements:**
- Patient Preparation: This test should not be requested in patients who have recently received radioisotopes, therapeutically or diagnostically, because of potential assay interference. The specific waiting period before specimen collection will depend on the isotope administered, the dose given and the clearance rate in the individual patient. Specimens will be screened for radioactivity prior to analysis. Radioactive specimens received in the laboratory will be held 1 week and assayed if sufficiently decayed, or canceled if radioactivity remains.
- Container/Tube: Preferred: Red top
- Acceptable: Serum gel

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 83519
**ACHE_9287**

**Acetylcholinesterase, Amniotic Fluid (AChE-AF), Amniotic Fluid**

**Specimen Requirements:** Container/Tube: Amniotic fluid container Specimen Volume: 1 mL
Collection Instructions: A specimen from the 14 to 18 week gestational period of pregnancy is preferred. Amniotic fluid from the 14 to 21 week gestational period is acceptable.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Amniotic Fld Refrigerated (preferred) 365 days
- Frozen 365 days
- Ambient 14 days

**CPT Code Information:** 82013

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**ACHS_8522**

**Acetylcholinesterase, Erythrocytes**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:** Whole Blood EDTA Refrigerated

**CPT Code Information:** 82482

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**ASCL1_71355**

**Achaete-Scute Homolog 1 (ACSL1) (hASH1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**SAFB_8213**

**Acid-Fast Smear for Mycobacterium**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Body fluid Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Bone marrow Container/Tube: SPS/Isolator System or green top (lithium heparin) Specimen Volume: Entire collection Specimen Type: Gastric washing Container/Tube: Sterile container Specimen Volume: 10 mL Collection Instructions: Neutralize specimen within 4 hours of collection with 100 mg of sodium carbonate per 5 to 10 mL of gastric wash. Specimen Type: Respiratory Sources: Bronchoalveolar lavage fluid, bronchial...
washing, sputum Container/Tube: Sterile container Specimen Volume: 4 mL Collection Instructions: Collect 3 respiratory specimens for acid-fast smears and culture in patients with clinical and chest X-ray findings compatible with tuberculosis. These 3 specimens should be collected at 8- to 24-hour intervals (24 hours when possible) and should include at least 1 first-morning specimen. Specimen Type: Stool Supplies: Stool Collection Kit, Random (T635) Container/Tube: Sterile container Specimen Volume: 5-10 g Specimen Type: Tissue Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Collect a fresh tissue specimen. Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen. Specimen Type: Swab Additional Information: Fresh tissue or body fluid is the preferred specimen type instead of a swab specimen. Recovery of mycobacteria and aerobic actinomycetes from swabs is variable. Sources: Wound, tissue, or body fluid Container/Tube: Culture transport swab (noncharcoal) Culturette Specimen Volume: Adequate specimen Collection Instructions: 1. Before collecting specimen, wipe away any excessive amount of secretion and discharge, if appropriate. 2. Obtain secretions or fluid from source with sterile swab. 3. If smear and culture are requested or both a bacterial culture and mycobacterial culture are requested, collect a second swab to maximize test sensitivity.

**Specimen Minimum Volume:** Varies; If mycobacterial culture is also requested, then 1.5 mL for body fluid, 3 mL for respiratory specimen, or a pea-sized piece of fresh tissue. If smear only is requested, then 0.5 mL for body fluid, 3 mL for respiratory specimen, or a pea-sized piece of fresh tissue.

**Transport Temperature:**

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<thead>
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**CPT Code Information:** 87206; 87176-Tissue processing (if appropriate); 87015-Mycobacteria culture, concentration (if appropriate);

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**SMACN**

**Actin, Smooth Muscle (SMActin) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

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**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**ACT**

**Actinomyces Culture**

**Specimen Requirements:** Specimen Type: Abscesses, intrauterine devices, percutaneous transtracheal aspirates, sterile body fluids, suprapubic aspirations, wounds Supplies: Anaerobe Transport Tube (T588) Specimen Volume: Entire specimen

**Transport Temperature:**

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**CPT Code Information:** 87075-Actinomyces culture; 62258-Id MALDI-TOF Mass Spec Anaerobe (if appropriate); 87153-Anaerobe identification by sequencing (if appropriate); 87176-Tissue processing (if appropriate);

**APTTB 6548**

**Activated Partial Thromboplastin Time (APTT), Plasma**

**Specimen Requirements:** Only orderable as part of a coagulation consultation. For more information see 1 of the following: LUPPR / Lupus Anticoagulant Profile BDIAL / Limited Bleeding Diathesis Profile THRMP / Thrombophilia Profile PROCT / Prolonged Clot Time Profile

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**APTTP 40935**

**Activated Partial Thromboplastin Time (APTT), Plasma**

**Specimen Requirements:** Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down, remove plasma and spin plasma again. Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen (preferred) 30 days
Ambient 4 hours

**CPT Code Information:** 85730

**APCRV 81967**

**Activated Protein C Resistance V (APCRV), Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma 2. Spin plasma again; remove plasma aliquot without disturbing bottom 0.5 mL 3. Freeze specimen aliquot immediately at or below -40°C, if possible but no longer than 4 hours after collection Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85307

**APCRR 60547**

**Activated Protein C Resistance V (APCRV), with Reflex to Factor V Leiden, Plasma**
Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Blood and plasma are required. Specimen Type: Whole blood Container/Tube: Preferred: Yellow top (ACD) Acceptable: EDTA or sodium citrate Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Each molecular coagulation test requested must have its own tube. Specimen Type: Platelet-poor plasma Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma aliquots immediately (no longer than 4 hours after collection) at -20°C or, ideally < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

Specimen Minimum Volume: Plasma: 0.5 mL Whole Blood: 3 mL

Transport Temperature:
Plasma Na Cit Frozen 14 days
Whole blood Ambient (preferred) 7 days
                                            Frozen 14 days
                                            Refrigerated 14 days

CPT Code Information: 85307

Acute Hepatitis Profile
Specimen Requirements: Both 0.5 mL of refrigerated serum and 2.5 mL of frozen serum are preferred for this test. Patient Preparation: For 24 hours before this test, do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Transfer 0.5 mL serum into an aliquot tube labeled as HAIGM, and ship refrigerate (required). 3. Transfer remaining 2.5 mL serum into a second aliquot tube labeled as SST Serum, and ship frozen (preferred).

Specimen Minimum Volume: 2 mL

Transport Temperature:
Serum Refrigerated 5 days
Serum SST Frozen (preferred) 30 days
                              Refrigerated 5 days

CPT Code Information: 80074 (if all 4 initial tests are performed); 86709 (if all 4 are not performed); 86705 (if all 4 are not performed); 87340 (if all 4 are not performed); 86803 (if all 4 are not performed); 87522 (if appropriate); 87341 (if appropriate);

Acute Myeloid Leukemia (AML), FISH
Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2.
Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL Bone Marrow: 1 mL

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:**

- 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**APPAN 35353**

**Acute Porphyria, Multi-Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplied with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimal essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**

- Varies

**CPT Code Information:**

- 81405-CPOX; 81406-HMBS; 81406-PPOX; 88233-(if appropriate); 88240-(if appropriate); 88240-(if appropriate);

**FACY 90308**

**Acyclovir, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in preservative-free plastic vial.. Note: Label specimen appropriately (serum). Plasma Draw blood in a
purple-top EDTA or pink-top tube(s). (Plasma gel tube is not acceptable.) Spin down and send 1 mL of EDTA plasma refrigerate in preservative-free plastic vial. Note: Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Refrigerated (preferred) 30 days
  - Frozen 120 days
  - Ambient 30 days

**CPT Code Information:** 80375

**ACRN**

**Acylcarnitines, Quantitative, Plasma**

**Specimen Requirements:** Specimen Type: Plasma Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 0.1 mL Collection Instructions: Draw specimen just prior to a scheduled meal or feeding.

**Specimen Minimum Volume:** 0.04 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 92 days
  - Refrigerated 64 days
  - Ambient 8 days

**CPT Code Information:** 82017

**ACRNS**

**Acylcarnitines, Quantitative, Serum**

**Specimen Requirements:** Specimen Type: Serum Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.1 mL Collection Instructions: Draw specimen just prior to a scheduled meal or feeding.

**Specimen Minimum Volume:** 0.04 mL

**Transport Temperature:**
- Serum Frozen (preferred) 60 days
  - Refrigerated 21 days
  - Ambient 72 hours

**CPT Code Information:** 82017

**ACYLG**

**Acylglycines, Quantitative, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Pediatric: If insufficient collection volume, submit as much specimen as possible in a single container; the laboratory will determine if volume is sufficient for testing. Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 4 mL
Transport Temperature:
Urine Frozen (preferred) 416 days
Refrigerated 9 days

CPT Code Information: 82542

**ADALX 64863**

**Adalimumab Quantitative with Reflex to Antibody, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel Acceptable: Red top
- **Specimen Volume:** 0.5 mL
- **Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days

CPT Code Information: 80299; 83520 (if appropriate);

**ADM13 61212**

**ADAMTS13 Activity and Inhibitor Profile**

**Specimen Requirements:**
- Patient Preparation: Fasting preferred
- Collection Container/Tube: Light-blue top (citrate)
- Submission Container/Tube: Plastic vials
- Specimen Volume: 2 mL in 2 plastic vials each containing 1 mL

**Collection Instructions:**
1. Specimen must be drawn prior to replacement therapy.
2. Spin down, remove plasma, and spin plasma again.
3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally, ≤ -40°C.

**Additional Information:**
1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.
2. If priority specimen, mark request form, give reason, and request a call-back.
3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

CPT Code Information: 85397-ADAMTS13 activity assay; 85335-ADAMTS13 inhibitor screen assay (if appropriate); 85335-ADAMTS13 Bethesda titer (if appropriate);

**ADMBU 61214**

**ADAMTS13 Inhibitor Bethesda Titer**

**Specimen Requirements:**
- Only orderable as part of a profile. For more information see ADM13 / ADAMTS13 Activity and Inhibitor Profile.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

CPT Code Information: 85335
**ADMIS 61213**  
**ADAMTS13 Inhibitor Screen Assay**  
**Specimen Requirements:** Only orderable as part of a profile. For more information see ADM13 / ADAMTS13 Activity and Inhibitor Profile.  
**Specimen Minimum Volume:** 2 mL  
**Transport Temperature:** Plasma Na Cit Frozen 14 days  
**CPT Code Information:** 85335

**ADSTM 62206**  
**Additional Flow Stimulant (Bill Only)**  
**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.  
**Transport Temperature:** Varies Ambient  
**CPT Code Information:** 86353

**AGSTM 62208**  
**Additional Flow Stimulant, LPAGF (Bill Only)**  
**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.  
**Transport Temperature:** Varies Ambient  
**CPT Code Information:** 86353

**MGSTM 62207**  
**Additional Flow Stimulant, LPMGF (Bill Only)**  
**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.  
**Transport Temperature:** Varies Ambient  
**CPT Code Information:** 86353

**VID2 45455**  
**Additional Testing Virus Ident**  
**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.  
**Transport Temperature:** Varies Varies  
**CPT Code Information:** 87253
Adenosine Deaminase, Blood

Specimen Requirements: Specimen Type: Whole Blood Container/Tube: Lavender top (EDTA) Specimen volume: 4 mL Collection Instructions: Send 4 mL whole blood in original tube refrigerated

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Refrigerated (preferred) 20 days

Ambient 5 days

CPT Code Information: 84311

Adenosine Deaminase, CSF

Specimen Requirements: Collect CSF in a leak-proof container. Send 0.3 mL Frozen. Note: 1. Centrifuge specimen at room temperature. Collect the specimen supernatant and freeze at -20°C. Specimen must remain frozen until received in lab. 2. Indicate source 3. Unacceptable: Turbid specimens, whole blood, bronchoalveolar Lavage (BAL)

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
CSF Frozen (preferred) 30 days

Refrigerated 7 days

Ambient 2 hours

CPT Code Information: 84311

Adenosine Deaminase, Pericardial Fluid

Specimen Requirements: Specimen Type: Pericardial Fluid Sources: Pericardial Fluid Container/Tube: Standard Transport Tube Specimen Volume: 0.3 mL Collection Instructions: Collect Pericardial Fluid in a leak-proof container. Centrifuge specimen at room temperature, transfer 0.3 mL pericardial fluid to plastic vial and freeze. Note: 1. Source required 2. Specimen must remain frozen until received at performing lab.

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
Body Fluid Frozen (preferred) 30 days

Refrigerated 7 days

Ambient 2 hours

CPT Code Information: 84311

Adenosine Deaminase, Peritoneal Fluid

Specimen Requirements: Specimen Type: Peritoneal fluid Sources: Container/Tube: Standard transport container Specimen volume: 0.3 mL Collection Instructions: Collect Peritoneal Fluid in a
leak-proof container. Centrifuge specimen at room temperature, transfer 0.3 mL peritoneal fluid to plastic vial and Ship frozen. Note: 1. Source required. 2. Specimen must remain frozen until received at performing lab.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Peritoneal Frozen (preferred) 30 days
  - Refrigerated 7 days
  - Ambient 2 hours

**CPT Code Information:** 84311

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**FADPL 75002**

**Adenosine Deaminase, Pleural Fluid**

**Specimen Requirements:** Specimen Type: Pleural Fluid Sources: Pleural Fluid Container/Tube: Standard Transport Tube Specimen Volume: 0.3 mL Collection Instructions: Collect Pleural fluid in a leak proof container; centrifuge specimen at room temperature, transfer 0.3 mL to standard tube and freeze. Ship frozen. Note: 1. Source is required. 2. Specimen must remain frozen until received at performing lab.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Pleural Fluid Frozen (preferred) 30 days
  - Refrigerated 7 days
  - Ambient 2 hours

**CPT Code Information:** 84311

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**FADE 91670**

**Adenovirus DNA, Quantitative Real-Time PCR**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Supplies: BBL CultureSwab, viral transport media Specimen Type: Swab Sources: Throat, nasopharyngeal Container/Tube: M4, V-C-M (green cap), or equivalent Container/Tube: Collection Instructions: Place swab into viral transport media. Specimen Type: Respiratory Sources: Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate Container/Tube: Sterile container Specimen Volume: 0.85 mL Other acceptable specimens: Specimen Type: Fluid Source: Spinal Fluid Container/Tube: Sterile Vial Specimen Volume: 0.85mL Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 0.85 mL Specimen Type: Whole Blood or Bone Marrow Container/Tube: Lavender top (EDTA) or yellow-top (ACD) Specimen Volume: 0.85 mL Additional Information: Draw blood in a lavender-top (EDTA) tube(s) or yellow-top (ACD) tube(s) and send 0.85 whole blood refrigerated (DO NOT FREEZE). Specimen Type: Serum Collection Container/Tube: Red or SST Submission Container/Tube: 12x75 mm screw capped vial Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL serum in a screw-capped vial, shipped refrigerated. Specimen Type: Plasma Collection Container/Tube: yellow-top (ACD) or lavender-top (EDTA) Submission Container/Tube: 12x75 mm screw capped vial Specimen Volume: 1 mL Collection Instructions: Draw blood in a yellow-top (ACD) or lavender-top (EDTA) tube(s). Spin down and transfer 1 mL ACD or EDTA plasma into a plastic, screw-top vial. Send specimen refrigerated.

**Specimen Minimum Volume:** 0.35 mL
**Transport Temperature:**
Varies Refrigerated (preferred) 7 days

- Frozen 30 days
- Ambient 48 hours

**CPT Code Information:** 87799

### ADV 70352
**Adenovirus Immunostain, Technical Component Only**

**Specimen Requirements:**

- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TCHONLY Ambient (preferred)

- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### LADV 89074
**Adenovirus, Molecular Detection, PCR**

**Specimen Requirements:**

- Submit only 1 of the following specimens:
  - Specimen Type: Body fluid Sources: Pleural, peritoneal, ascites, pericardial, or amniotic
  - Container/Tube: Sterile container
  - Specimen Volume: 0.5 mL
  - Collection Instructions: Do not centrifuge.
  - Specimen Type: Respiratory Sources: Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate
  - Container/Tube: Sterile container
  - Specimen Volume: 1 mL
  - Collection Instructions: Do not centrifuge.
  - Specimen Type: Stool
  - Supplies: Stool Collection Kit, Random (T635)
  - Container/Tube: Sterile container
  - Specimen Volume: 1 g
  - Collection Instructions: Place swab back into a multimicrobe media (M4-RT, M4, or M5).
  - Specimen Type: Tissue
  - Supplies: M4-RT (T605)
  - Container/Tube: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT, M4, or M5)
  - Specimen Volume: Entire collection
  - Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:**
- Body Fluid, Respiratory Specimen, Spinal Fluid, or Urine: 0.3 mL
- Stool: 0.5 g
- Swab or Tissue: NA

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days

- Frozen 7 days

**CPT Code Information:** 87798

### LCADP 89887
**Adenovirus, Molecular Detection, PCR, Plasma**

**Specimen Requirements:**

- Collection Container/Tube: Lavender top (EDTA) Submission
**FADIP**  
**Adiponectin**  
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial. Note: Overnight fasting is required.  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
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**CPT Code Information:** 83520

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**FADMK**  
**ADmark Phospho-Tau/Total-Tau/A Beta 42, Analysis & Interp, CSF (Symptomatic)**  
**Specimen Requirements:** Specimen Type: Spinal Fluid Sources: CSF Container/Tube: Polypropylene tube Specimen Volume: 2 mL Collection Instructions: Collect 2 mL of spinal fluid (CSF). Send 2 mL CSF in a polypropylene transfer tube, ship frozen. Note: CSF sample can be collected in the Standard Lumbar Puncture Kit, but must be transferred to a polypropylene tube within 4 hours.  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
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**CPT Code Information:** 83520 x 3

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**RACTH**  
**Adrenocorticotropic Hormone, ACTH, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:**  
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<tbody>
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Container/Tube: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Spin down promptly.

**Specimen Minimum Volume:** 0.3 mL  
**Transport Temperature:**  
<table>
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**CPT Code Information:** 87798

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Current as of January 8, 2019 2:38 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com  
Page 37
**ACTHI 70351**

**Adrenocorticotrophic Hormone (ACTH) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information:** 86003

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**ACTH 8411**

**Adrenocorticotrophic Hormone (ACTH), Plasma**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Ice-cooled, lavender top (EDTA) Submission Container/Tube: Plastic, 5 mL, aliquot tube Specimen Volume: 1 mL Collection Instructions: 1. Morning (6 a.m.-10:30 a.m.) specimen is desirable. 2. Collect with a pre-chilled EDTA tube and transport to the laboratory on ice. 3. Spin down in a refrigerated centrifuge within 2 hours and immediately separate plasma from cells. 4. Immediately freeze plasma. Additional Information: Separate specimens should be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 28 days Refrigerated 3 hours Ambient 2 hours

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**ADLTX 62710**

**Adulterants Survey, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL. Collection Instructions: Collect specimen in the provided container, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
**ADULT**

**29345**

**Adulterants Survey, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody information, see ADLTX / Adulterants Survey, Chain of Custody, Urine. 2. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days

Frozen 14 days

Ambient 72 hours

**CPT Code Information:** 81005

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**ISAE**

**45246**

**Aerobe Identification by Sequencing (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies

Varies

**CPT Code Information:** 87153

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**AGXTZ**

**35348**

**AGXT Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Specimen preferred to arrive within 96 hours of draw.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies

Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**ALT**

**8362**

**Alanine Aminotransferase (ALT) (GPT), Serum**

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**CPT Code Information:** 81005

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*Current as of January 8, 2019 2:38 am CST*  
*800-533-1710 or 507-266-5700 or mayocliniclabs.com*
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information:** 84460

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**AGXTG**

Alanine:Glyoxylate Aminotransferase (AGXT) Mutation Analysis (G170R), Blood

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Specimen preferred to arrive within 96 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Ambient (preferred)
Frozen Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**FZ004**

Albumin Ratio

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 7 days

**CPT Code Information:** See profile FBBAB

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**FALUF**

Albumin, Body Fluid

**Specimen Requirements:** Collect 1 mL body fluid, centrifuge and separate to remove cellular material. Send frozen in a plastic container.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Body Fluid Frozen (preferred) 30 days
**ALB 8436**

**Albumin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top

Volume: 0.5 mL

Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Storage Time</th>
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</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred) 150 days</td>
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<tr>
<td></td>
<td>Frozen 120 days</td>
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</table>

**CPT Code Information:** 82042

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**FALBU 90309**

**Albuterol, Serum/Plasma**

**Specimen Requirements:** Submit only one of the following specimens: Serum Draw blood in a plain, red-top tube(s). Serum gel tube is not acceptable. Spin down and send 3 mL serum refrigerated in plastic preservative free vial. Plasma Draw blood in a lavender-top or pink top (EDTA) tube(s). Plasma gel tube is not acceptable. Spin down and send 3 mL EDTA plasma refrigerated in plastic preservative free vial.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Serum</td>
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<td></td>
<td>Frozen 365 days</td>
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<tr>
<td></td>
<td>Ambient 30 days</td>
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</table>

**CPT Code Information:** 82040

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**FABI 57729**

**Alcohol Biomarkers, Urine**

**Specimen Requirements:** Collect 20 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 10 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Storage Time</th>
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<tr>
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<td></td>
<td>Frozen 180 days</td>
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<td></td>
<td>Ambient 72 hours</td>
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</table>

**CPT Code Information:** 80307; 80321 (if appropriate);
**Aldolase, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 14 days

**CPT Code Information:** 82085

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**Aldosterone with Sodium, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: 2 Plastic, 5-mL tubes (T465) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. Use 15 mL of 50% acetic acid for children <5 years old. This preservative is intended to achieve a pH of between approximately 2 and 4. 3. Place 5 mL of well mixed, 24-hour urine in plastic, 5-mL tube (T465) and label as Aldosterone. 4. Place 5 mL of well mixed, 24-hour urine in plastic, 5-mL tube (T465) and label as Sodium. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives for multiple collections and Renin-Aldosterone Studies for more detailed instructions in Special Instructions.

**Specimen Minimum Volume:** Aldosterone: 1 mL/Sodium: 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 82088-Aldosterone; 84300-Sodium;

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**Aldosterone, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: Spironolactone (Aldactone) should be discontinued for 4 to 6 weeks before testing. Supplies: Urine tubes, 10-mL (T068) Submission Container/Tube: Plastic, urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. Use 15 mL of 50% acetic acid for children <5 years old. This preservative is intended to achieve a pH of between approximately 2 and 4. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens and Renin-Aldosterone Studies for more detailed instructions in Special Instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 14 days
AIVC 6503

**Aldosterone, Inferior Vena Cava, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1.8 mL
- Additional Information: See Renin-Aldosterone Studies in Special Instructions for more detailed instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 28 days
- Ambient 4 days

CPT Code Information: 82088

ALAV 6349

**Aldosterone, Left Adrenal Vein, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1.8 mL
- Additional Information: See Renin-Aldosterone Studies in Special Instructions for more details.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 28 days
- Ambient 4 days

CPT Code Information: 82088

ARAV 6348

**Aldosterone, Right Adrenal Vein, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1.8 mL
- Additional Information: See Renin-Aldosterone Studies in Special Instructions for more detailed instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 28 days
- Ambient 4 days

CPT Code Information: 82088

ALDS 8557
**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1.2 mL Collection Instructions: 8 a.m. draw time (after the patient is active for 2 hours) is recommended; preferably no later than 10 a.m. Additional Information: See Renin-Aldosterone Studies in Special Instructions for more detailed instructions.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 28 days
- Ambient 4 days

**CPT Code Information:** 82088

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**FALPE 57945**

**Alfalfa (Medicago sativa) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**FALKC 39052**

**ALK on Cytology Specimens, FISH**

**Specimen Requirements:** Submit a previously stained and cover slipped cytology slide from a cytology specimen that was fixed in ethanol- or methanol-based fixatives. Slides: 1 slide Additional Information: Processed slides will be retained by Mayo Clinic Laboratories and will not be returned to the client.

**Specimen Minimum Volume:** 1 slide

**Transport Temperature:**
- Slide Ambient (preferred) 28 days
- Refrigerated

**CPT Code Information:** 88377

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**ALP 8340**

**Alkaline Phosphatase, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Frozen (preferred) 60 days
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** 84075

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**ALKI**

**Alkaline Phosphatase, Total and Isoenzymes, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL divided into 2 tubes each containing 0.5 mL

**Specimen Minimum Volume:** 0.5 mL divided into 2 tubes each containing 0.25 mL

**Transport Temperature:**
- Serum Frozen (preferred) 14 days
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** Alkaline Phosphatase, Serum; 84075; , Alkaline Phosphatase Isoenzymes, Serum; 84080;

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**FABP2**

**Allergic Bronchopulmonary Aspergillosis Panel II**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86331; 86001; 86003; 82785;

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**ALLOI**

**Allo-isoleucine, Blood Spot**

**Specimen Requirements:** Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Local newborn screening card Specimen Volume: 2 Blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. At least 1 spot should be complete and unpunched. 3. An alternative blood collection option for a patient >1 year of age is fingerstick. 4. Include type of feeding information on the collection card. 5. Do not expose specimen to heat or direct sunlight. 6. Do not stack wet specimens. 7. Keep specimen dry. 8. Let blood dry on the Blood Spot Collection Card (T493) at ambient temperature in a horizontal position for 3 hours before adding additional blood spots to the card. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special

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Current as of January 8, 2019 2:38 am CST     800-533-1710 or 507-266-5700 or mayocliniclabs.com_page 45
Specimen Minimum Volume: Blood spot: 1

Transport Temperature:
Whole blood Ambiant (preferred)
Frozen Refrigerated

CPT Code Information: 82136

**FALFG**

**Almond Food IgG**

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

**ALM**

**Almond, IgE**

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**ALPS**

**Alpha Beta Double-Negative T Cells for Autoimmune Lymphoproliferative Syndrome**

Specimen Requirements: For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Whole Blood EDTA  Ambient 72 hours

CPT Code Information: 88184; 88185 x 4;

AFSH 71768

Alpha FSH Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

WASQR 47958

Alpha Globin Gene Sequencing, Blood

Specimen Requirements: Only orderable as a reflex. For more information see: -HAEVP / Hemolytic Anemia Evaluation -HBEFLC / Hemoglobin Electrophoresis Cascade, Blood -MEVP / Methemoglobinemia Evaluation -REVE / Erythrocytosis Evaluation THEVP / Thalassemia and Hemoglobinopathy Evaluation

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 14 days

CPT Code Information: 81259-HBA1/HBA2; full sequence

WASEQ 61362

Alpha Globin Gene Sequencing, Blood

Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD, sodium heparin Specimen Volume: 4 mL Collection Instructions: Do not transfer blood to other containers

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 14 days

CPT Code Information: 81259-HBA1/HBA2; full sequence

FALG 57663

Alpha Lactalbumin IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

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**Alpha Synuclein Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Alpha-1-Acid Glycoprotein**

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial. Note: Overnight fasting is preferred.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 90 days
  - Ambient 6 hours

**CPT Code Information:** 82985

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**Alpha-1-Antitrypsin (AAT) Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
  - Refrigerated
CA1A
8835

Alpha-1-Antitrypsin Clearance, Feces and Serum

Specimen Requirements: Both feces and serum are required. Blood must be drawn during the stool collection period. Specimen Type: Serum
Collection Container/Tube: Red top or serum gel Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL Specimen Type: Stool Supplies: Stool Containers - 24, 48, 72 Hours Kit (T291) Specimen Volume: Entire collection
Collection Instructions: 1. Collect a 24-hour stool collection. 2. If no specimen is obtained in 24 hours, extend collection to 48 to 72 hours. Note time frame.

Specimen Minimum Volume:
Homogenized Stool: 1 mL; Serum: 0.5 mL

Transport Temperature:
Fecal
Frozen (preferred) 14 days
Ambient 14 days
Refrigerated 14 days

Serum
Frozen (preferred) 28 days
Ambient 28 days
Refrigerated 28 days

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

A1APP
26953

Alpha-1-Antitrypsin Phenotype

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 1.25 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

CPT Code Information: 82103 x 2

A1ALC
61767

Alpha-1-Antitrypsin Proteotype S/Z by LC-MS/MS, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 1.25 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

CPT Code Information: 82103-Alpha-1-antitrypsin; 82104-Alpha-1-antitrypsin phenotype;
A1AF

**Alpha-1-Antitrypsin, Random, Feces**

**Specimen Requirements:**
- Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635) Container
- Tube: Stool container (T288)
- Specimen Volume: 5 g
- Collection Instructions: Collect a random stool specimen.

**Specimen Minimum Volume:**
- Homogenized Stool: 1 mL

**Transport Temperature:**
- Fecal Frozen (preferred) 14 days
- Ambient 14 days
- Refrigerated 14 days

**CPT Code Information:** 82103

AAT

**Alpha-1-Antitrypsin, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel
- Specimen Volume: 1 mL

**Specimen Minimum Volume:**
- 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82103

A1M24

**Alpha-1-Microglobulin, 24 Hour, Urine**

**Specimen Requirements:**
- Container/Tube: Plastic, 5-mL tube
- Specimen Volume: 4 mL
- Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative. 3. Mix well before taking 4-mL aliquot.
- Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:**
- 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 83883
**Alpha-1-Microglobulin, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL
Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 83883

**Alpha-2 Plasmin Inhibitor, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85410

**Alpha-2-Macroglobulin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 83883

**Alpha-Amylase, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86008

### ALFP

**70353 Alpha-Fetoprotein (AFP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### L3AFP

**88878 Alpha-Fetoprotein (AFP) L3% and Total, Hepatocellular Carcinoma Tumor Marker, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Frozen (preferred) 90 days
Refrigerated 5 days

**CPT Code Information:** 82107

### AFP

**8162 Alpha-Fetoprotein (AFP) Tumor Marker, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 90 days

**CPT Code Information:** 82105
Alpha-Fetoprotein (AFP), Peritoneal Fluid

**Specimen Requirements:** Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL (Samples <0.5 mL may be rejected)

**Transport Temperature:**
- Peritoneal Frozen (preferred) 90 days
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** 86316

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Alpha-Fetoprotein (AFP), Single Marker Screen, Maternal, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. Do not draw specimen after amniocentesis, as this could affect results. 2. Collection tubes should be centrifuged within 2 hours of collection. Additional Information: 1. Draw blood between 15 weeks, 0 days and 22 weeks, 6 days. 2. Initial or repeat testing is determined in the laboratory at the time of report and will be reported accordingly. To be considered a repeat test for the patient, the testing must be within the same pregnancy and trimester, with interpretable results for the same test, and both tests are performed at Mayo Clinic.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 82105

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Alpha-Fetoprotein (AFP), Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- CSF Frozen (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 86316

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Alpha-Fetoprotein, Amniotic Fluid

**Specimen Requirements:** Container/Tube: Amniotic fluid container Specimen Volume: 1 mL Collection Instructions: Do not centrifuge. Additional Information 1. The following information is
required: a. Date ultrasound performed b. Estimated due date by ultrasound c. Collection date d. Gestational age must be between 13 and 24 weeks; 16 to 18 weeks preferred. 2. If chromosome studies are also requested, see AF / Chromosome Analysis, Amniotic Fluid. The specimen for AFP-AF testing, when requested with chromosome analysis, cannot be frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Amniotic Fld  Refrigerated 7 days

**CPT Code Information:** 82106-AFP; 82013-Acetylcholinesterase (if appropriate);

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**FUCW 8814**

**Alpha-Fucosidase, Leukocytes**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood ACD  Refrigerated (preferred) 6 days

Ambient 4 days

**CPT Code Information:** 82657

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**FAGPL 57717**

**Alpha-Gal Panel**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003 x 4

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**AGABS 89407**

**Alpha-Galactosidase, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood spot collection card (T493) Acceptable: Ahlstrom 226 filter paper and Whatman Protein Saver 903 Paper Specimen Volume: 2 blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. An alternative blood collection option for a patient >1 year of age is fingerstick. 3. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 4. Do not expose specimen to heat or direct sunlight. 5. Do not stack wet specimens. 6. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

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Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Alpha-Galactosidase, Leukocytes**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood ACD Refrigerated (preferred) 72 hours

CPT Code Information: 82657

**Alpha-Galactosidase, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Frozen (preferred) 14 days

CPT Code Information: 82657

**Alpha-Globin Gene Analysis**

**Specimen Requirements:** Only orderable as part of a profile. For more information see ATHAL / Alpha-Globin Gene Analysis.

**Transport Temperature:**
Varies

CPT Code Information: 81269
**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 1 mL/Amniotic Fluid: 10 mL

**Transport Temperature:** Varies Varies

**CPT Code Information:** Alpha-Globin Gene Analysis; 81269-HBA1/HBA2 (alpha globin 1 and alpha globin 2) (eg, alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis, for common deletions or variant (eg, Southeast Asian, Thai, Filipino, Mediterranean, alpha3.7, alpha4.2, alpha20.5, and Constant Spring); Reflex Tests; CULAF / Amniotic Fluid Culture for Genetic Testing; Tissue culture for amniotic fluid (if appropriate); Cryopreservation (if appropriate); Maternal Cell Contamination, Molecular Analysis; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**Alpha-L-Iduronidase, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Whole blood: Ambient (preferred) 7 days
- Refrigerated: 7 days

**CPT Code Information:** 82657

**Alpha-L-Iduronidase, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood spot collection card (T493) Acceptable: Ahlstrom 226 Filter Paper and Whatman Protein Saver 903 Paper Specimen Volume: 2 blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is fingerstick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese
Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**
- Whole blood Ambient (preferred) 90 days
- Frozen 90 days
- Refrigerated 90 days

**CPT Code Information:** 82657

### ALFA 82897

**Alpha-Lactoalbumin, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86008

### MANN 62511

**Alpha-Mannosidase, Leukocytes**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Whole Blood ACD Refrigerated (preferred) 6 days
- Ambient 4 days

**CPT Code Information:** 82657

### ANAS 8782

**Alpha-N-Acetylglucosaminidase, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Frozen 365 days

**CPT Code Information:** 84311
**APGH**

**Alpha-Subunit Pituitary Tumor Marker, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Red Frozen (preferred) 90 days
- Refrigerated 7 days

**CPT Code Information:** 82397

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**ABCRS**

**Alpha/Beta Crystallin IHC, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**ALPRT**

**Alport (Collagen IV Alpha 5 and Alpha 2) Immunofluorescent Stain, Renal**

**Specimen Requirements:** Supplies: Renal Biopsy Kit (T231) Source: Kidney or Skin Container/Tube: Transport medium (Michel's or Zeus media) (T231), Frozen tissue. Specimen Volume: Entire specimen Collection Instructions: 1. For kidney cases, collect specimens according to the instructions in Renal Biopsy-Procedures of Handling Tissue for Light Microscopy, Immunohistology, and Electron Microscopy in Special Instructions. 2. If standard immunoglobulin and complement immunofluorescence has already been performed, submit the residual frozen tissue (must contain glomeruli) on dry ice. 3. For skin cases, submit punch biopsy in Zeus/Michel's. Acceptable: 2 frozen tissue unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick.

**Transport Temperature:**
- Special Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 88346-primary IF; ;
Alprazolam (Xanax)

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a green-top sodium heparin tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL of refrigerated plasma in a plastic vial.

**Specimen Minimum Volume:** 1.0 mL

**Transport Temperature:**
- Frozen: 180 days
- Ambient: 72 hours

**CPT Code Information:** 80346

Alternaria tenuis, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen: 90 days

**CPT Code Information:** 86003

Aluminum, 24 Hour, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 82108
**Aluminum, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: -Greiner Z Trace Element no-additive (Aluminum Only), 6 mL (T713) -Metal Free Specimen Vial (T173) Container/Tube: Greiner Z Trace Element (T713) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.2 mL Collection Instructions: See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 82108

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**Aluminum/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82108-Aluminum/creatinine ratio

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**Alveolar Rhabdomyosarcoma (ARMS), 13q14 (FOXO1 or FKHR) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5-micron thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron thick sections placed on positively charged slides, and 1 hematoxylin and eosin (H and E)-stained slide

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**ARMS 35329**

**Alveolar Rhabdomyosarcoma by Reverse Transcriptase PCR (RT-PCR)**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue Collection Instructions: Process all specimens into FFPE blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 5% tumor cell population Slides: A minimum of ten, 5-micron, unstained slides are required.

**Transport Temperature:**
Varies Ambien
(preferred)

**CPT Code Information:** 81401-FOXO1/PAX3; 81401-FOXO1/PAX7; 88381-Microdissection, manual;

**TFE3F 35319**

**Alveolar Soft Part Sarcoma (ASPS)/Renal Cell Carcinoma (RCC), Xp11.23 (TFE3), FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each;
coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

FAMAN
91132

Amantadine (Symmetrel)

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Varies Refrigerated (preferred)  14 days

Frozen  180 days
Ambient  72 hours

CPT Code Information: 80375

PAMIK
37032

Amikacin, Peak, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Refrigerated (preferred)  14 days

Frozen  28 days
Ambient  72 hours

CPT Code Information: 80150

RAMIK
37033

Amikacin, Random, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: Serum for a peak level should be drawn 30 to 60 minutes after last dose (order PAMIK / Amikacin, Peak, Serum). Serum for a trough level should be drawn immediately before next scheduled dose (order TAMIK / Amikacin, Trough, Serum).

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Refrigerated (preferred)  14 days

Frozen  28 days
**TAMIK 37031**

**Amikacin, Trough, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80150

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**AAMSD 60200**

**Amino Acids, Maple Syrup Urine Disease Panel, Plasma**

**Specimen Requirements:** Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA, plasma gel, or lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Fasting (overnight preferred, 4 hours minimum). Infants should be drawn just before next feeding (2-3 hours without TPN if possible). 2. Centrifuge within 4 hours if specimen is stored at refrigerated temperature and aliquot plasma. Send plasma frozen.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Plasma Frozen 14 days

**CPT Code Information:** 82136

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**AAQP 9265**

**Amino Acids, Quantitative, Plasma**

**Specimen Requirements:** Patient Preparation: Fasting (overnight preferred, 4 hours minimum). Infants should be drawn just before next feeding (2-3 hours without total parenteral nutrition, if possible). Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA, PST, lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge within 4 hours if specimen is stored at refrigerated temperature and aliquot plasma. Send plasma frozen.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Plasma Frozen 14 days

**CPT Code Information:** 82139
Amino Acids, Quantitative, Random, Urine

**Specimen Requirements:** Supplies: Aliquot tube, 5-mL (T465) Container/Tube: Aliquot tube, 5-mL (T465) Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Frozen (preferred) 70 days
- Refrigerated 14 days

**CPT Code Information:** 82139

Amino Acids, Quantitative, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.2 mL Collection Instructions: Collect specimen from second collection vial.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- CSF Frozen 14 days

**CPT Code Information:** 82139

Amino Acids, Urea Cycle Disorders Panel, Plasma

**Specimen Requirements:** Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA or green top (lithium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Fasting (overnight preferred, 4 hours minimum). Infants should be drawn just before next feeding (2-3 hours without TPN if possible). 2. Centrifuge within 4 hours if specimen is stored at refrigerated temperature and aliquot plasma. Send plasma frozen.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Plasma Frozen 14 days

**CPT Code Information:** 82136

Aminolevulinic Acid (ALA), Urine

**Specimen Requirements:** Patient Preparation: Patient should abstain from alcohol for 24 hours prior to and during testing. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Frozen 45 days

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CPT Code Information: 82135

**FALAU 57350**

**Aminolevulinic Acid (ALA), Urine**

**Specimen Requirements:** Specimen Type: Urine Submission Container/Tube: Plastic, 6-mL tube(s) (MML T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours (NO preservative). 2. Refrigerate specimen during the 24-hour collection. 3. Send specimen frozen in the plastic, 6-mL urine tube (T465) 4. Collection volume and duration are required

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**

- Urine Frozen (preferred) 30 days
- Refrigerated 4 days

CPT Code Information: 82135

**ALADW 31895**

**Aminolevulinic Acid Dehydratase (ALA-D), Washed Erythrocytes**

**Specimen Requirements:** All porphyrin tests on erythrocytes can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or green top (lithium heparin) Submission Container/Tube: Plastic vial Specimen Volume: Entire washed erythrocyte suspension Collection Instructions: Process entire specimen as follows: 1. Immediately place specimen on wet ice. 2. Transfer entire specimen to a 12-mL graduated centrifuge tube. 3. Centrifuge specimen for 10 minutes at 2,000 rpm. 4. Record volume of packed cells and the total volume of the specimen. 5. Discard supernatant plasma. 6. Wash packed erythrocytes 2 times by resuspension of at least an equal amount of cold 0.9% saline, mix, and centrifuge for 5 minutes at 2,000 rpm, discarding supernatant after each washing. 7. Resuspend packed cells to the original total volume with 0.9% saline. Invert specimen gently to mix.

**Specimen Minimum Volume:** 1 mL of washed and resuspended erythrocytes

**Transport Temperature:**

- Washed RBC Frozen 24 hours

CPT Code Information: 82657

**ALAD 88924**

**Aminolevulinic Acid Dehydratase (ALAD), Whole Blood**

**Specimen Requirements:** All porphyrin tests on whole blood can be performed on 1 draw tube. Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or green top (lithium heparin) Specimen Volume: Full tube Collection Instructions: 1. Patient should abstain from alcohol for 24 hours. 2. Immediately place specimen on wet ice. Additional Information: Include a list of medications the patient is currently taking.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Whole blood  Refrigerated 4 days
**Amiodarone, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: Draw blood no sooner than 12 hours (trough value) after last dose.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 24 hours

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**Amitriptyline and Nortriptyline, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 7 days

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**Ammonia, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plain, plastic screw-top tube Specimen Volume: > or =0.5 mL Collection Instructions: 1. Specimens should be put on ice immediately after collection. 2. Centrifuge at refrigerated temperature (4°C, ½ C). 3. Aliquot plasma into plastic screw-top tube. Keep on ice. 4. Freeze plasma within 2 hours of draw.

**Specimen Minimum Volume:** 0.50 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 7 days
- Refrigerated 2 hours

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**Ammonium, 24 Hour, Urine**

**CPT Code Information:** 82657

**CPT Code Information:** 80299

**CPT Code Information:** 80335; G0480 (if appropriate);

**CPT Code Information:** 82140
**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: Collect urine for 24 hours. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 82140

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**RAMCN**

**Ammonium, Random, Urine**

**Specimen Requirements:** Only orderable as part of a profile. For more information see SSATR / Supersaturation Profile, Pediatric, Random, Urine.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 82140

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**RAMBO**

**Ammonium, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 82140

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**CULAF**

**Amniotic Fluid Culture for Genetic Testing**

**Specimen Requirements:** Provide a reason for referral and gestational age with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted.

**Container/Tube:** Amniotic fluid container Specimen Volume: 5-10 mL Collection Instructions: 1.
Discard the first 2 mL of amniotic fluid. If the culture will be performed in conjunction with chromosome analysis and alpha-fetoprotein, a total of approximately 25 mL to 30 mL will be needed for the combined studies. 2. Place the tubes in a Styrofoam container (T329). 3. Fill remaining space with packing material. 4. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 5. Bloody specimens are undesirable. 6. If the specimen does not grow in culture, you will be notified within 7 days of receipt. Additional Information: 1. Advise Express Mail or equivalent if not on courier service. 2. Results will be reported and also telephoned or faxed, if requested.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

Amniotic Fld Refrigerated (preferred)

Ambient

**CPT Code Information:** 88235; 88240;

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**Amobarbital, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1.5 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**

Serum Red Refrigerated (preferred) 14 days

Ambient 14 days

Frozen 14 days

**CPT Code Information:** 80345; G0480 (if appropriate);
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FAMP 91171**

**Amphetamine, Serum or Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 80324

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**AMPMX 62712**

**Amphetamine-Type Stimulants Confirmation, Chain of Custody, Meconium**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required. Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain of custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
- Meconium Frozen (preferred) 28 days
- Ambient 28 days
- Refrigerated 28 days

**CPT Code Information:** 80324; 80359; G0480 (if appropriate);

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**AMPHM 84371**

**Amphetamine-Type Stimulants Confirmation, Meconium**

**Specimen Requirements:** Supplies: Stool container. Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)
Transport Temperature:
Meconium Frozen (preferred) 28 days
Ambient 28 days
Refrigerated 28 days

CPT Code Information: 80324; 80359; G0480 (if appropriate);

FASCC 75109
Amphetamines Analysis, Serum
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 7 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 3 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours
CPT Code Information: 80307; 80324, 80359 â€“ if applicable;

AMPHX 62711
Amphetamines Confirmation, Chain of Custody, Urine
Specimen Requirements: Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.
Specimen Minimum Volume: 2.5 mL
Transport Temperature:
Urine Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days
CPT Code Information: 80324; 80359; G0480 (if appropriate);

AMPHU 8257
Amphetamines Confirmation, Urine
Specimen Requirements: Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. Submitting <20 mL will compromise our ability to perform all necessary testing.
Specimen Minimum Volume: 2.5 mL
Transport Temperature:
Urine Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 80324; 80359; G0480 (if appropriate);

**FAMPB 91994**
**Amphotericin B**
**Specimen Requirements:** Container/Tube: Agar slant or other appropriate media Specimen Volume: Organism in pure culture Complete and submit with specimen: 1. 1. Fungus Testing Lab request form Collection Instructions: Organism must be in pure culture, actively growing. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance.

**Transport Temperature:**
Varies Ambient

**CPT Code Information:** 87188 â€“ mould â€“ MIC microdilution or agar dilution (if appropriate); 87186 â€“ yeast â€“ MIC microdilution or agar dilution (if appropriate);

**AMBF 8371**
**Amylase, Body Fluid**
**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Body Fluid Refrigerated (preferred) 7 days
- Frozen 30 days
- Ambient 24 hours

**CPT Code Information:** 82150

**FAMYS 57288**
**Amylase, Isoenzymes**
**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). Serum gel tube is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a green-top (sodium or lithium heparin) tube(s). Spin down and send 1 mL plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 30 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 82150/x2
Amylase, Pancreatic Cyst

**Specimen Requirements:** Container/Tube: Plain, plastic, screw top tube Specimen Volume: 1 mL Additional Information: A minimum of 0.5 mL is required for testing; specimens <0.5 mL may be rejected.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Pancreatic Cyst Fluid  Frozen (preferred)  30 days Refrigerated 7 days

**CPT Code Information:** 82150

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Amylase, Pancreatic, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)
Ambient 7 days
Frozen

**CPT Code Information:** 82150

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Amylase, Random, Urine

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 7 days Frozen

**CPT Code Information:** 82150

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Amylase, Timed Collection, Urine

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a 2-hour urine specimen. 2. The patient should have nothing by mouth except water between the hours of 6 p.m. and 10 a.m. 3. The bladder should be completely emptied at 8 a.m. This urine is discarded. 4. An adequate urine specimen (>100 mL) is ensured if the patient drinks 3 or more 8-ounce glasses of water. Half of this amount should be ingested between 7:30 a.m. and 8 a.m. The second half should be ingested at 8:30 a.m. 5. Collect all urine after 8 a.m. in container supplied. 6. The collection ends at 10 a.m. Include the 10 a.m. void in the collection container. 7. Measure and record the 2-hour volume. 8. Overlay urine with toluene (5 mL), and send aliquot. If no toluene is available, refrigerate specimen during collection, and send the aliquot

**CPT Code Information:** 82150
specimen frozen. 9. Record the date and time (the exact start and completion times of the 2-hour collection) on the container label.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 82150

**AMS 8352**

**Amylase, Total, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 30 days
- Ambient 7 days

**CPT Code Information:** 82150

**AAH 70349**

**Amyloid A (Hepatic) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**AMYA 70548**

**Amyloid A (SAA) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated
CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**FABP 91408**

**Amyloid Beta-Protein**

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 3 mL of EDTA plasma frozen in plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma EDTA Frozen 30 days

CPT Code Information: 83519

**AMYPI 70549**

**Amyloid P (SAP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**APPI 70357**

**Amyloid Precursor Protein (APP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**AMPIP 70356**

**Amyloid Protein Identification, Paraffin, LC-MS/MS**

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554) Specimen Type: Formalin-fixed or B5-fixed, paraffin-embedded tissue block Container/Tube: Pathology Packaging Kit (T554) Collection Instructions: Do not send fixed tissue slides. Testing can only be done on paraffin-embedded tissue blocks.
Transport Temperature:
AMYLOID Ambient
(preferred)
Refrigerated

CPT Code Information: 88313; 82542 (if appropriate); 88380 (if appropriate);

TTRX 83674

Amyloidosis, Transthyretin-Associated Familial, Reflex, Blood

Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD
Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Whole blood Refrigerated (preferred) 4 days
Ambient 4 days

CPT Code Information: 82542 LC-MS; 81404 TTR gene (if appropriate);

ANAID 45010

Anaerobe Ident (Bill Only)

Specimen Requirements: This test is for Billing Purposes Only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87076

ISAN 45255

Anaerobe Identification by Sequencing (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87153

BATTA 80931

Anaerobe Suscep Battery (Bill Only)

Specimen Requirements: This test is for Billing Purposes Only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87181 x 3-Susceptibility studies, antimicrobial agent; agar dilution method, per agent
**SANA 45337**

**Anaerobe Suscep per Agent (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87181

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**ANAP 81157**

**Anaplasma phagocytophilum (Human Granulocytic Ehrlichiosis) Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 86666

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**ALK 70354**

**Anaplastic Lymphoma Kinase (ALK) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**ANPAT 70318**

**Anatomic Pathology Consultation, Wet Tissue**

**Specimen Requirements:** Specimen Type: Lung biopsy Supplies: Pathology Packaging Kit (T554) Formalin, 10% (T118) Michel’s Transport Media for Immunofluorescent Testing on Tissue (T321) Specimen Volume: Entire specimen Collection Instructions: 1. Submit portion of lung tissue in 10% neutral buffered formalin (T118) for light microscopy processing. Alternatively, submit a representative hematoxylin and eosin (H and E) slide from the light microscopy sample along with the tissue in Michel’s transport media (T321). Pathology Packaging Kit [T554] can be used to submit H and E slide. 2. Place a portion of the unfixed lung tissue in Michel’s transport media (T321) for immunofluorescence. Specimen Type: Cardiac biopsy Supplies: Pathology Packaging Kit (T554) Formalin, 10% (T118) Michel’s Transport Media for Immunofluorescent Testing on Tissue (T321) Electron Microscopy Kit (T660) Gluta
(Trumps) (T130) Specimen Volume: Entire specimen Collection Instructions: 1. For ideal analysis, collect 4 to 6 biopsy specimens and submit all in 10% neutral buffered formalin (T118) unless electron microscopy (EM) is requested. 2. If EM is needed, submit at least 1 biopsy into 2.5% to 3% buffered glutaraldehyde preservative using the Electron Microscopy Kit (T660) along with the formalin biopsy specimens. If formalin biopsy specimens are not available, light microscopic slides would also be acceptable. Additional Information: If the question is drug toxicity, storage disease, or if the patient is younger than 25 years old, send at least 1 biopsy specimen in 2.5% to 3% buffered glutaraldehyde in case electron microscopy (EM) is needed for diagnosis. Specimen Type: Cardiac explant Supplies: Pathology Packaging Kit (T554) Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Volume: Entire specimen Collection Instructions: 1. Fix entire explant specimen in formalin for a minimum of 24 hours. 2. Following fixation, lightly wrap specimen in formalin-soaked paper towel, place in a leak-proof sealable bag with a small amount of formalin, seal, and ship ambient in a sturdy shipping container (Refrigerate/Ambient Mailer, 5 lb T329). Additional Information: Include the last pretransplantation echocardiogram with report and images as well as all other relevant clinical documents. Specimen Type: Enucleated eye Supplies: Pathology Packaging Kit (T554) Formalin - 10% Histo Prep, 45 mL (T117) Specimen Volume: Entire specimen Collection Instructions: 1. Immediately after removal, place specimen in approximately 300 mL of 10% neutral buffered formalin. 2. Enucleated eye should not be opened or punctured. 3. After 48 hours in the originating laboratory, the specimen should be transferred from the larger, 300-mL container to a smaller container with fixative (Formalin - 10% Histo Prep, 45 mL T117) to be shipped without risk of leakage. Specimen Type: Iris, conjunctiva, cornea, and other small biopsies from eye Supplies: Pathology Packaging Kit (T554) Formalin - 10% Histo Prep, 45 mL (T117) Specimen Volume: Entire specimen Collection Instructions: 1. Obtain biopsy. 2. Place iris, conjunctiva, cornea, and other small biopsies on a paper mount (a piece of filter paper or other porous paper). This helps to keep the specimen from curling when it is fixed. 3. Immediately but gently place specimen (on the paper mount) into 10% formalin, approximately 20 times the volume of the biopsy (Formalin - 10% Histo Prep, 45 mL T117). 4. Placing sutures at the margins of resection with accompanying explanatory draft will help orientation of the specimen in the lab, in cases where margins are important. Specimen Type: Vitreous fluid/Aqueous humor Supplies: Pathology Packaging Kit (T554) Aliquot Tube, 5 mL (T465) Specimen Volume: Entire specimen Collection Instructions: 1. Obtain liquid specimen. 2. Place the liquid (vitreous or aqueous) concentrate into a small tube with a screw-top cap (T465). Seal the tube tightly. 3. Put the specimen immediately on a refrigerated cool pack (not dry ice or frozen cool pack). 4. If a washing (diluted) is available, it can also be sent in similar manner. Specimen Stability Information: Refrigerated

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 88300-Level I-surgical pathology, gross examination only (if appropriate); 88302-Level II-surgical pathology, gross and microscopic examination (if appropriate); 88304-Level III-surgical pathology, gross and microscopic examination (if appropriate); 88305-Level IV-surgical pathology, gross and microscopic examination (if appropriate); 88307-Level V-surgical pathology, gross and microscopic examination (if appropriate); 88309-Level VI-surgical pathology, gross and microscopic examination (if appropriate);

**ANCH**  
**anchovy, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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### Androgen Receptor (AR) Immunostain, Technical Component Only

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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### Androstane Diol Glucuronide

**Specimen Requirements:**
- Submit only one of the following: Serum Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 1 mL serum refrigerate in plastic vial. Plasma Draw blood in a (lavender-top) EDTA tube(s). Spin down and send 1 mL plasma refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL Note: Minimum volume does not allow for repeat analysis

**Transport Temperature:**
- Varies Refrigerated (preferred) 6 days
- Frozen 365 days
- Ambient 6 days

**CPT Code Information:** 82154

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### Androstenedione, Serum

**Specimen Requirements:**
- Container/Tube: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 7 days
MASF 35859  

**Angiosarcoma, MYC (8q24) Amplification, FISH, Tissue**  

**Specimen Requirements:** Provide a reason for referral and pathology report with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens:  

- **Specimen Type:** Tissue  
- **Preferred:** Tissue block  
- **Collection Instructions:** Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used.  
- **Acceptable:** Slides  
- **Collection Instructions:** Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.  

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.  

**Transport Temperature:**  
- Tissue: Ambient (preferred)  
- Refrigerated  

**CPT Code Information:**  
- 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report;  
- 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate);  
- 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate);  
- 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate);  
- 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate);  
- 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate);  
- 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate);  
- 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);  

FACEC 57824  

**Angiotensin Converting Enzyme, CSF**  

**Specimen Requirements:** Specimen Type: Spinal Fluid  
- Sources: CSF  
- Container/Tube: Sterile container  
- Specimen Volume: 1 mL  
- Collection Instructions: Collect 1 mL of spinal fluid (CSF). Ship frozen.  

**Specimen Minimum Volume:** 0.5 mL  

**Transport Temperature:**  
- CSF: Frozen (preferred) 180 days  
- Refrigerated 7 days  

**CPT Code Information:** 82164  

ACE 8285  

**Angiotensin Converting Enzyme, Serum**  

**Specimen Requirements:**  
- Collection Container/Tube: Preferred: Serum gel  
- Acceptable: Red top  
- Submission Container/Tube: Plastic vial  
- Specimen Volume: 1 mL  
- Additional Information: The use of angiotensin converting enzyme (ACE)-inhibiting antihypertensive drugs will cause decreased ACE values.  

**Specimen Minimum Volume:** 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred)  7 days
Frozen  180 days

CPT Code Information:  82164

**FANGI**

**Angiotensin I, Plasma**

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s). Separate plasma from cells immediately after draw, and send 3 mL of EDTA plasma frozen in plastic vial. Note: 1. Patient should be on a normal sodium diet, 110 mEq of sodium. Patient should be in a recumbent posture for at least 30 minutes prior to drawing specimen. 2. Diuretics, mineralocorticoids, glucocorticoids, estrogens, oral contraceptives, adrenocorticotropic hormone medications, sodium, potassium, and posture all affect angiotensin levels.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma EDTA  Frozen

CPT Code Information:  82164

**FANG**

**Angiotensin II, Plasma**

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s). Separate plasma from cells immediately after draw, and send 3 mL of EDTA plasma frozen in plastic vial. Patient preparation: 1. Patient should be on a normal sodium diet, 110 mEq of sodium. Patient should be in a recumbent posture for at least 30 minutes prior to drawing specimen. 2. Diuretics, mineralocorticoids, glucocorticoids, estrogens, oral contraceptives, ACT medications and sodium, potassium, and posture all affect Angiotensin levels.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma EDTA  Frozen 30 days

CPT Code Information:  82163

**ANISP**

**Anisakis, Parasite, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days
**ANSE 82487**

**Anise, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel

Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

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**FANSE 57520**

**Anatto Seed (Bixa orellana) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

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**ANNEX 70355**

**Annexin-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**ADNAS 80204**

**Anti-DNase B Titer, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel

Specimen Volume: 1 mL Additional Information: Fasting preferred but not required.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 7 days

**CPT Code Information:** 86215

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**Anti-Enterocyte Antibodies**

**Specimen Requirements:**
- **Specimen Type:** Serum
- **Container/Tube:** Red Specimen
- **Volume:** 1 mL

**Collection Instructions:**
- Collect blood in a red-top no additive tube and submit 1 mL of serum shipped frozen.
- REQUIRED to accompany all specimens (testing will not proceed until all requirements are met):
  1. Completed clinical summary/medical history form
  2. See Special Instructions for a copy of the form.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 88346; 88350 x 2; ;

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**Anti-IgA**

**Specimen Requirements:**
- **Specimen Type:** Serum
- **Container/Tube:** Red or SST
- **Volume:** 1 mL

**Collection Instructions:**
- Draw blood in a plain, red-top tube(s) or serum gel tube(s).
- Spin down and send 1 mL of serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days
  - Ambient 7 days

**CPT Code Information:** 83520

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**Anti-IgE**

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
- Spin down and send 1 mL of serum ambient in a plastic vial.

**Transport Temperature:**
- Serum Ambient (preferred) 14 days
  - Frozen 365 days
  - Refrigerated 14 days
CPT Code Information: 83516

FANBF
57173 Anti-Nuclear Ab (FANA), Body Fluid

Specimen Requirements: 1 mL body fluid. Shipped refrigerate. Required: 1. Specimen source 2. CSF - Reference value is different, order ZW164 referral lab code 287.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Varies Refrigerated (preferred) 7 days

   Frozen             180 days
   Ambient            48 hours

CPT Code Information: 86038; 86039;

FCLNE
91321 Anti-Phosphatidylcholine Ab

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 3 mL of serum frozen in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 30 days

   Refrigerated    14 days

CPT Code Information: 83520/x3

FPHET
91322 Anti-Phosphatidylethanolamine Panel

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 3 mL of serum frozen in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 30 days

   Refrigerated    14 days

CPT Code Information: 83520 x 3 ;

FARWB
57647 Anti-retinal autoantibodies follow up, WB

Specimen Requirements: Note: This test should only be ordered as follow up to previous Anti-retinal autoantibodies performed at Oregon Health Sciences University (OHSU) Ocular Immunology Laboratory. Submit only one of the following specimens: Serum: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 5 mL serum refrigerated in a plastic vial. Plasma: Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 5 mL EDTA plasma refrigerated in a plastic vial. Complete and submit with specimen: Completed OHSU Ocular
request form Clinical history Referring physician information (name & phone number) -NOTE: Without this information, testing cannot be completed.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Varies Refrigerated 7 days

**CPT Code Information:** 84182

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**ABIDR 113389**

**Antibody Identification, RBC**

**Specimen Requirements:** Both blood and serum are required. Specimen Type: Blood Collection Container/Tube: 6-mL PINK-top (EDTA) Submission Container/Tube: Aliquot tube Specimen Volume: 3 mL plasma 3 mL RBCs Collection Instructions: 1. Spin down and separate plasma from cells. Send both tubes. 2. Label specimen as EDTA plasma. Specimen Type: Serum Collection Container/Tube: 10-mL Red top Submission Container/Tube: Aliquot tube Specimen Volume: 5 mL serum 5 mL RBCs Collection Instructions: 1. Spin down and separate serum from clot. Send both tubes. 2. Label specimen as serum.

**Specimen Minimum Volume:** Blood: 6 mL EDTA Pediatric: 2 mL serum

**Transport Temperature:**
Varies Ambient (preferred) 4 days
  Refrigerated 4 days

**CPT Code Information:** 86870-Antibody Identification (per panel tested); 86860-Antibody elution (if appropriate); 86905 x 3-Antigloblin, direct (if appropriate); 86978-Adsorption, each (if appropriate); 81403-Human Erythrocyte Antigen (if appropriate) - Internal only ;

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**ABYSR 113387**

**Antibody Screen with Reflexed Antibody Identification, RBC**

**Specimen Requirements:** Container/Tube: Pink (EDTA) Specimen Volume: 6 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 4 days
  Ambient 4 days

**CPT Code Information:** 86850

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**ABTIR 113390**

**Antibody Titer, RBC**

**Specimen Requirements:** Both blood and serum are required. Specimen Type: Blood Collection Container/Tube: 6-mL PINK-top (EDTA) Submission Container/Tube: Aliquot tube Specimen Volume: 3 mL plasma 3 mL RBCs Collection Instructions: Spin down and separate plasma from cells. Send both tubes. Specimen Type: Serum Collection Container/Tube: 10-mL Red top Submission Container/Tube: Aliquot tube Specimen Volume: 5 mL serum 5 mL RBCs Collection Instructions: Spin down and separate serum from clot. Send both tubes.

**Specimen Minimum Volume:** Blood: 6 mL EDTA Pediatric: 2 mL serum
Transport Temperature:
Varies Ambient (preferred) 4 days
Refrigerated 4 days

CPT Code Information: 86886-Antibody titer; 86870-Antibody Identification (if appropriate-per panel tested); 86860-Antibody elution (if appropriate); 86880 x 3-Antigloblin, direct (if appropriate); 86905-Each red cell antigen typing (if appropriate); 86978-Adsorption, each (if appropriate); 81403-Human Erythrocyte Antigen (if appropriate)-Internal only;

Antibody to Extractable Nuclear Antigen Evaluation, Serum
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.35 mL
Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86235 x 6

Antidepressant Drug Screen, Qualitative
Specimen Requirements: Submit only 1 of the following: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL of plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial, Urine Collect 3 mL random urine and send refrigerated in a preservative free plastic urine container.
Specimen Minimum Volume: 0.6 mL
Transport Temperature:
Varies Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 72 hours

CPT Code Information: 80333; 80337; 80369;

Antidepressant Drug Screen, Ur, Quantitative
Specimen Requirements: Collect 3 mL random urine without preservatives. Ship refrigerated in a plastic container.
Specimen Minimum Volume: 0.6 mL
Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 30 days

Current as of January 8, 2019 2:38 am CST
**MMLYP 81602**

**Antimicrobial Susceptibility Panel, Yeast**

**Specimen Requirements:** Specimen Type: Organism in pure culture Supplies: Infectious Container, Large (T146) Container/Tube: Sabouraud's dextrose agar slant Specimen Volume: Infecting yeast isolate Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Specimen Minimum Volume:** NA

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 80333; 80337; 80369; ;

**MMLRG 81601**

**Antimicrobial Susceptibility, Acid-Fast Bacilli, Rapidly Growing**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook 7H10 agar slant or other appropriate media Specimen Volume: Pure isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Specimen Minimum Volume:** NA

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87186

**MMLSG 34805**

**Antimicrobial Susceptibility, Acid-Fast Bacilli, Slowly Growing**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook 7H10 agar slant or other appropriate media Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87186

**ZMMLS 8073**

**Antimicrobial Susceptibility, Aerobic Bacteria, MIC**
**Specimen Requirements:** Supplies: Infectious Container, Large (T146) Container/Tube: Agar slant or other appropriate media Specimen Volume: Organism in pure culture Collection Instructions: 1. Perform isolation of infecting bacteria. 2. Organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Frozen  
Refrigerated

**CPT Code Information:** 87186-Sensitivity, MIC-per organism for routine battery; 87181-Susceptibility per drug and per organism for drugs not in routine battery (if appropriate); 87185-Beta lactamase (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate);

**MMLSA 56031**  
**Antimicrobial Susceptibility, Anaerobic Bacteria, MIC**

**Specimen Requirements:** Supplies: Anaerobic Transport Tube (T588) Thioglycollate broth or any other suitable anaerobic transport system Infectious Container, Large (T146) Specimen Type: Organism in pure culture Acceptable Sources: Available on isolates from blood cultures, bone and joint infections, or brain abscesses and organisms isolated in pure culture from other sources Container/Tube: Preferred: Anaerobic Transport Tube (T588) Acceptable: Thioglycollate broth or any other suitable anaerobic transport system Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**
Varies Ambient

**CPT Code Information:** 87181 x 3-Antimicrobial Susceptibility, Anaerobic Bacteria, MIC; 87076-Id MALDI-TOF mass spec anaerobe (if appropriate); 87181-Anaerobe Susceptibility per Agent (if appropriate); 87185-Beta Lactamase (if appropriate); 87186-Sensitivity, MIC-per organism for routine battery (if appropriate); 87181-Susceptibility per drug and per organism for drugs not in routine battery (if appropriate);

**TB1LN 35994**  
**Antimicrobial Susceptibility, Mycobacterium tuberculosis Complex, First Line**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook 7H10 agar slant Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 87188 x 3-Antimicrobial Susceptibility, Mycobacterium tuberculosis Complex, Broth Method; 87186-Susceptibility, Mtb Cx, 2nd Line (if appropriate);

**MMLNS 82019**  
**Antimicrobial Susceptibility, Nocardia species**

Current as of January 8, 2019 2:38 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com  
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**Specimen Requirements:** Specimen Type: Organism in pure culture Supplies: Infectious Container, Large (T146) Container/Tube: Preferred: Middlebrook 7H10 agar slant without antimicrobials Acceptable: Sabouraud's dextrose agar slant or similar media without antimicrobials (eg, 7H11 agar slant, LJ, MGIT [7H9] broth media) Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Transport Temperature:**
Varies Ambient (preferred)
Refrigerated

**CPT Code Information:** 87186

**Antimony, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: EDTA Royal-Blue Top Monoject Blood Tube 7mL (T767) Container/Tube: Covidien-Monoject royal blue-top (EDTA) Vacutainer glass trace element blood collection tube (T767). Other royal blue-top tubes are not acceptable for this testing. Specimen Volume: 0.8 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Whole blood Refrigerated (preferred) 28 days

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**CPT Code Information:** 83018

**Antimony, Urine**

**Specimen Requirements:** 10 mL aliquot of random or spot urine collected in metal free or acid washed container. Send specimen refrigerated.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days

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**CPT Code Information:** 83018

**Antimullerian Hormone (AMH), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.1 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 90 days

CPT Code Information: 83520

VASC 83012

Antineutrophil Cytoplasmic Antibodies Vasculitis Panel, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 83516 x 2; 86255-Cytoplasmic neutrophil antibodies screen (if appropriate); 86256-Cytoplasmic neutrophil antibodies titer (if appropriate);

ANA2 9026

Antinuclear Antibodies (ANA), Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86038

NAIFA 65161

Antinuclear Antibodies, HEp-2 Substrate, IgG, Serum

Specimen Requirements: Container/Tube: Serum gel or red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 28 days

CPT Code Information: 86039
Antistrep-O Titer, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Additional Information: Fasting preferred but not required.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 86060

Antithrombin Activity, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at -40°C or colder, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. Heparin treatment may lower plasma antithrombin.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85300

Antithrombin Antigen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge, remove plasma, and centrifuge plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or ideally, < or =-40°C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85301

APC Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred:
Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81201-APC (adenomatous polyposis coli) (eg, familial adenomatosis polyposis [FAP], attenuated FAP) gene analysis; full gene sequence; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

### APIXA

**Apixaban, Anti-Xa, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C, or, ideally ≤ -40°C. Additional Information: 1. A double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. If priority specimen, mark request form, give reason, and request a call-back.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 80299

### APO1Z

**Apolipoprotein A-I (APOA1) Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure
Apolipoprotein A-II (APOA2) Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Varies Ambient (preferred) Frozen Refrigerated

CPT Code Information: 81479-Unlisted molecular pathology procedure

Apolipoprotein A1 and B, Plasma

Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge and aliquot 1 mL of plasma. Send refrigerated.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Plasma EDTA Refrigerated (preferred) 8 days Frozen 60 days

CPT Code Information: 82172 x 2

Apolipoprotein A1, Plasma

Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge and aliquot 1 mL of plasma. Send refrigerated.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Plasma EDTA Refrigerated (preferred) 8 days Frozen 60 days

CPT Code Information: 82172

Apolipoprotein B, Plasma

Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission
Container/Tube: Plastic vial  
Specimen Volume: 1 mL  
Collection Instructions: Centrifuge and aliquot 1 mL of plasma. Send refrigerated.

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Plasma EDTA Refrigerated (preferred) 8 days  
Frozen 60 days

**CPT Code Information:** 82172

### Apolipoprotein E Genotyping, Blood

**APOEG**  
**35358**  
**Apolipoprotein E Genotyping, Blood**  
**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood  
Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant  
Specimen Volume: 3 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Transport Temperature:**  
Varies Ambient (preferred)  
Frozen  
Refrigerated

**CPT Code Information:** 81401-APOE (apolipoprotein E) (eg, hyperlipoproteinemia type III, cardiovascular disease, Alzheimer disease), common variants (eg, *2, *3, *4)

### Apple IgG

**FAPLG**  
**57629**  
**Apple IgG**  
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 28 days  
Frozen 365 days  
Ambient 7 days

**CPT Code Information:** 86001

### Apple, IgE

**APPL**  
**82712**  
**Apple, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 0.5 mL for each 5 allergens requested  
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**APR**
82835

**Apricot, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**APTTM**
9118

**APTT Mix 1:1**

**Specimen Requirements:** Only orderable as part of a coagulation consultation. For more information see 1 of the following: LUPPR / Lupus Anticoagulant Profile BDIAL / Bleeding Diathesis Profile THRMP / Thrombophilia Profile PROCT / Prolonged Clot Time Profile

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

CPT Code Information: 85732

**ARBOP**
83267

**Arbovirus Antibody Panel, IgG and IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86651 x 2-California virus (La Crosse) encephalitis antibody, IgG and IgM; 86652 x 2-Eastern equine encephalitis antibody, IgG and IgM; 86653 x 2-St. Louis encephalitis antibody, IgG and IgM; 86654 x 2-Western equine encephalitis antibody, IgG and IgM; 86657 x 2-Zika virus antibodies, IgG and IgM;

**ABOPC**
83897

**Arbovirus Antibody Panel, IgG and IgM, Spinal Fluid**
**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 86651 x 2-California virus (La Crosse) encephalitis antibody, IgG and IgM; 86652 x 2-Eastern equine encephalitis antibody, IgG and IgM; 86653 x 2-St. Louis encephalitis antibody, IgG and IgM; 86654 x 2-Western equine encephalitis antibody, IgG and IgM;

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**ARGIN 70359**

**Arginase-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**AVP 80344**

**Arginine Vasopressin, Plasma**

**Specimen Requirements:** Patient Preparation: 1. This test should not be requested on patients who have recently received radioactive material. 2. Have patient fast and thirst for 6 hours (no liquids, including water, are allowed). Specimen Type: Platelet-poor plasma Collection Container/Tube: Lavender top (EDTA) iced tube Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: Process 5 mL of EDTA whole blood as follows: 1. Spin down in a refrigerated centrifuge at approximately 1,000 x G (2,000 rpm for a 20-cm radius centrifuge) for 10 minutes. 2. Remove plasma, carefully avoiding the platelet/buffy coat.

**Specimen Minimum Volume:** 1.15 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 14 days

Refrigerated 24 hours

**CPT Code Information:** 84588

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**FARI 57112**

**Aripiprazole (Abilify)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL
**ARVGP 63160**

**Arrhythmogenic Cardiomyopathy Multi-Gene Panel, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:** Whole Blood EDTA Ambient (preferred) Refrigerated

**CPT Code Information:** 80342

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**ARSAZ 35362**

**ARSA Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen

Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours

Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:** Blood: Variates

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**Transport Temperature:**

Varies Refrigerated (preferred) 7 days

Frozen 180 days

Ambient 72 hours

**CPT Code Information:** 81439
**CPT Code Information:** 81405 ARSA (arylsulfatase A) (eg. arylsulfatase A deficiency), full gene sequence; ; Fibroblast Culture for Genetic Test; ; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); ; 88240-Cryopreservation (if appropriate); ;

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**Arsenic Fractionation, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: 1. Patient should not eat seafood for a 48-hour period prior to start of collection. 2. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert. Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

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**CPT Code Information:** 82175

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**Arsenic Fractionation, Random, Urine**

**Specimen Requirements:** Patient Preparation: 1. Patient should not eat seafood for a 48-hour period prior to start of collection. 2. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Aliquot Tube, 5 mL (T465) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

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**CPT Code Information:** 82175

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**Arsenic Occupational Exposure, Random, Urine**

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**CPT Code Information:** 48551
**Specimen Requirements:** Only orderable as part of profile. See ARSOR / Arsenic Occupational Exposure with Reflex, Random, Urine or HMSOR / Heavy Metal Occupational Exposure with Reflex, Urine.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 72 hours

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**ARSOR**

**Arsenic Occupational Exposure, with Reflex, Random, Urine**

**Specimen Requirements:** Patient Preparation: - Patient should not eat seafood for a 48-hour period prior to start of collection. - High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 6 mL. Collection Instructions: 1. Collect urine a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 72 hours

**CPT Code Information:** 82175 ; 82570 ;

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**ASU24**

**Arsenic with Reflex, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: - Patient should not eat seafood for a 48-hour period prior to start of collection. - High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Plastic, 10-mL urine tube (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert. Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 10 mL. Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 72 hours
CPT Code Information: 82175

**ASB 8645**

**Arsenic, Blood**

**Specimen Requirements:** Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original collection tube. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

CPT Code Information: 82175

**ASHA 8651**

**Arsenic, Hair**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. Additional Information: If known, indicate source of hair (axillary, head, or pubic).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**
- Hair Ambient (preferred)
  - Frozen
  - Refrigerated

CPT Code Information: 82175

**ASNA 89848**

**Arsenic, Nails**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: 1. Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. 2. Clippings should be taken from all 10 fingernails or toenails. Additional Information: If known, indicate source of nails (fingernails or toenails).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**
- Nail Ambient (preferred)
CPT Code Information: 82175

ARSC
48541

Arsenic/Creatinine Ratio, Urine

Specimen Requirements: Only orderable as part of profile. See ARSCR / Arsenic/Creatinine Ratio, with Reflex, Random, Urine or HMCRU / Heavy Metal/Creatinine Ratio, with Reflex, Urine.

Specimen Minimum Volume: 3 mL

Transport Temperature:
- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

ARSCR
48540

Arsenic/Creatinine, with Reflex, Random, Urine

Specimen Requirements: Patient Preparation: -Patient should not eat seafood for a 48-hour period prior to start of collection. -High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert

Specimen Volume: 6 mL

Collection Instructions: 1. Collect urine a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

Specimen Minimum Volume: 3 mL

Transport Temperature:
- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

CPT Code Information: 82175 ; 82570 ;

FART
57913

Artichoke (Cynara scolymus) IgE

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days
ARSU 8777

Arylsulfatase A, 24 Hour, Urine

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL tube (T068) Specimen Volume: 6 mL Collection Instructions: 1. Collect a 24-hour urine specimen. 2. No preservative. 3. Refrigerate specimen during collection. Additional Information: See Urine Preservatives—Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Urine Refrigerated 14 days

CPT Code Information: 86003

ARSAW 8779

Arylsulfatase A, Leukocytes

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood ACD Refrigerated (preferred) 4 days
Ambient 4 days

CPT Code Information: 84311

ARSB 8151

Arylsulfatase B, Fibroblasts

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

**Transport Temperature:**
Tissue Varies

CPT Code Information: 82657-Arylsulfatase B; 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

ASCRI 82764

Ascaris, IgE

Current as of January 8, 2019 2:38 am CST
800-533-1710 or 507-266-5700 or mayocliniclabs.com
Page 101
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Ascorbic Acid (Vitamin C), Plasma

Specimen Requirements: Patient Preparation: Fasting overnight (12-14 hours) (infants-draw prior to next feeding). Water can be taken as needed. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Green top (heparin) Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL Collection Instructions 1. Immediately place specimen on wet ice. Maintain specimen on wet ice and process within 4 hours of draw. 2. Centrifuge at 4°C, aliquot plasma into amber vial to protect from light and freeze immediately on dry ice.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Heparin Frozen 14 days

CPT Code Information: 82180

Ashkenazi Jewish Mutation Analysis Panel Without Cystic Fibrosis (CF)

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2 full tubes Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tubes. Additional Information: A patient education brochure (T561) is available upon request.

Specimen Minimum Volume: 6 mL

Transport Temperature:
Varies Ambient
(preferred)
Frozen
Refrigerated

CPT Code Information: 81200-ASPA aspartoacylase (eg, Canavan disease) gene analysis, common variants (eg, E285A, Y231X); 81209-BLM (Bloom syndrome, Rec! helicase-like) (eg, Bloom syndrome) gene analysis, 2281 del6ins7 variant; 81242-FANCC (Fanconi anemia, complementation group C) (eg, Fanconi anemia, type C) gene analysis, common variant (eg IVS4+4A->T); 81251-GBA (glucosidase, beta acid) (eg, Gaucher disease) gene analysis, common variants (eg, N370S, 84GG, L444P, IVS2+1G>A); 81255-HEXA (hexosaminidase A (alpha polypeptide) (eg, Tay-Sachs disease) gene
analysis, common variants (eg, 1278insTATC, 1421+1G->C, G269S); 81260-IKBKAP (inhibitor of kappa light polypeptide gene enhance in B-cells, kinase complex-associated protein) (eg. Familial dysautonomia) gene analysis common variants (eg, 2507_6T->C, R696P; 81290-MCOLN1 (mucolipin 1) (eg. Mucolipidosis, type IV) gene analysis, common variants (eg, IVS3-2A->G, del6.4kb); 81330-SMPD1 (sphingomyelin phosphodiesterase 1, acid syosomal) (eg, Niemann-Pick disease, Type A) gene analysis, common variants (eg, R496L, L302P, fsP330); 83080 Hexosaminidase A and Tot (additional test);

Asparagine, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Aspartate Aminotransferase (AST) (GOT), Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 30 days
Ambient 7 days

CPT Code Information: 84450

Aspen (Populus tremuloides) IgE

Specimen Requirements: Draw blood in plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003
Aspergillus (Galactomannan) Antigen, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.5 mL Collection Instructions: 1. Avoid exposure of specimen to atmosphere. 2. Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87305

Aspergillus Antibodies, Immunodiffusion, Serum

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86606 x 3

Aspergillus Antigen, Bronchoalveolar Lavage

**Specimen Requirements:** Container/Tube: Sterile, leak-proof container Specimen Volume: 2 mL Additional Information: To prevent specimen contamination, avoid opening/transferring specimen.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Lavage Frozen (preferred) 14 days
- Refrigerated 5 days

**CPT Code Information:** 87305

Aspergillus flavus IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
Frozen: 365 days
Ambient: 28 days

CPT Code Information: 86003

**Aspergillus fumigatus, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**Aspergillus fumigatus, IgG Antibodies, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

CPT Code Information: 86606

**Aspergillus IgG Precipitins Panel**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

CPT Code Information: 86331 x 7

**Aspergillus niger, IgE**

CPT Code Information: 82911
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

ADMA 83651
Asymmetric Dimethylarginine, Plasma
Specimen Requirements: Patient Preparation: Fasting-overnight (12 hours) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma EDTA Frozen (preferred)
Ambient 7 days

CPT Code Information: 82542

ATRX 70360
ATRX Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

AHUSD 64881
Atypical Hemolytic Uremic Syndrome (aHUS) Complement Panel, Serum and Plasma
Specimen Requirements: Both plasma and serum are required for this test. Patient Preparation: 1. Fasting preferred. 2. Samples should not be drawn earlier than 48 hours following plasma exchange. Specimen Type: Plasma Collection Container/Tube: Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate plasma from cells; 1,500 x g for 10 minutes at 4°C. 3. Freeze specimen within 30 minutes. Specimen Type: Serum Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and...
separate serum from clot. 3. Freeze specimen within 30 minutes.

**Specimen Minimum Volume:** Serum, Plasma: 1 mL each

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days
Serum Red  Frozen 14 days

**CPT Code Information:** 86160 x 7-Complement; antigen, each component; 86161-functional activity, each component; 86162-total hemolytic (CH50);

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**FAPPN**

57142  

**Atypical Pneumonia DNA Panel Qual**  

**Specimen Requirements:** Note: Source is required. Submit only 1 of the following: Bronchial Lavage/Bronchial Wash: Collect 1 mL in a sterile container with a leak-proof cap. Ship refrigerate. Sputum: Collect 1 mL in a sputum collection kit or a sterile, plastic container with a leak-proof cap. Ship refrigerate. Throat or Nasopharyngeal Swab: Collect in 3 mL M4 media or V-C-M medium (green-cap) tube or equivalent (UTM). Ship refrigerate.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

- Frozen 30 days  
- Ambient 48 hours

**CPT Code Information:** 87486/Chlamydia pneumoniae, amplified probe technique; 87541/Legionella pneumophila, amplified probe technique; 87581/Mycoplasma pneumoniae, amplified probe technique; 87798/Amplified probe technique, each organism;

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**AUPU**

82855  

**Aureobasidium pullulans, IgE**  

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

- Frozen 90 days

**CPT Code Information:** 86003

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**APIN**

82803  

**Australian Pine, IgE**  

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**DYS1**  
37428  
**Autoimmune Dysautonomia Evaluation, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

**CPT Code Information:** 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKC autoantibody; 83519-N-type calcium channel antibody; 83519-P/Q-Type Calcium Channel Ab; 83520-Striational (striated muscle) antibodies; 86255-AGNA-1 (if appropriate); 86255-Amphiphysin (if appropriate); 86255-ANNA-1; 86255-ANNA-2 (if appropriate); 86255-ANNA-3 (if appropriate); 86255-CRMP-5-IgG (if appropriate); 86255-PCA-1 (if appropriate); 86255-PCA-2 (if appropriate); 86255-PCA-Tr (if appropriate); 86341-GAD65 antibody assay; 83519-ACh receptor (muscle) modulating antibodies (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 84182-CRMP-5-IgG Western blot (if appropriate); 84182-Amphiphysin Western Blot (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86255-AMPIS (if appropriate); 86255-GABCS (if appropriate); 86255-NMDCS (if appropriate); 86255-AMPIS (if appropriate); 86255-AMPCs (if appropriate); 86255-Ampa-R Ab CBA, S (if appropriate); 86255-NMDI-S (if appropriate); 86255-AMPIS (if appropriate); 86255-NMO/AQP4-IgG FACS titer (if appropriate); 86255-LG1CS (if appropriate); 86255-CS2CS (if appropriate);

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**GID1**  
37429  
**Autoimmune Gastrointestinal Dysmotility Evaluation, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

**CPT Code Information:** 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKC autoantibody; 83519-N-type calcium channel antibody; 83520-Striational (striated muscle) antibodies; 86255-ANNA-1; 86341-GAD65 antibody assay; 83519-ACh receptor (muscle) modulating antibodies (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 84182-CRMP-5-IgG Western blot (if appropriate); 84182-Amphiphysin Western Blot (if appropriate); 86255-NMDA-R Ab CBA, S (if appropriate); 86255-AMPA-R Ab CBA, S (if appropriate);
86255-GABA-B-R Ab CBA, S (if appropriate); 86256-NMDA-R Ab IF Titer Assay, S (if appropriate); 86256-AMPA-R Ab IF Titer Assay, S (if appropriate); 86256-GABA-B-R Ab IF Titer Assay, S (if appropriate); 86255-ANNA-2 (if appropriate); 86255 ANNA-3 (if appropriate); 86255 PCA-1 (if appropriate); 86255 PCA-2 (if appropriate); 86255 PCA-Tr (if appropriate); 86255 CRMP-5-IgG (if appropriate); 86255 Amphiphysin (if appropriate); 86255 AGNA-1 (if appropriate); 86256-NMO/AQP4-IgG FACS titer (if appropriate); 86255-LG1CS (if appropriate); 86255-CS2CS (if appropriate);

**ALDP**

**Autoimmune Liver Disease Panel, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86255; 83516; 86038; 86256-Smooth muscle antibodies titer (if appropriate);

**AUTOP**

**Autoinflammatory Primary Immunodeficiency (PID) Gene Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient < 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated < 24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mL (microliters) Collection Instructions: 1. The preferred volume is 100 mL at a concentration of 250 ng/mL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL
Arpkz 35359

Autosomal Recessive Polycystic Kidney Disease (ARPKD), Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: Blood: 1 mL/Ammniotic Fluid: 10 mL/Chorionic Villi: 5 mg

Transport Temperature: Varies Varies

CPT Code Information: 81404; 81479; 81408-PKHD1; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

FAVCG 57690

Avocado IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Serum Refrigerated (preferred) 28 days

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CPT Code Information: 86001
**Avocado, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

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**AXIN2 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
  - Frozen
  - Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology code; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

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**Azathioprine (Imuran) as 6-Mercaptopurine**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours
B-Cell CD40 Expression by Flow Cytometry, Blood

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:** Whole Blood EDTA Ambient 72 hours

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B-Cell Deficiency Primary Immunodeficiency (PID) Gene Panel

**Specimen Requirements:** Due to lower concentration of DNA yielded from alternate specimen sources, _PMS2 cannot be performed on any sample type other than whole blood or DNA extracted from whole blood. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information:

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:** Varies Varies

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**CPT Code Information:** 80375, 88184
ALLM 63052

**B-Cell Lymphoblastic Leukemia (B-ALL) Monitoring, Minimal Residual Disease (MRD) Detection, Bone Marrow**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution A or B)  
Acceptable: EDTA, Sodium heparin Specimen Volume: 3 mL Slides: Include 5- to 10-unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens is not required. 2. Label specimen appropriately (bone marrow).

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**  
Bone Marrow  Ambient

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker  
88185 x 7-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each)  
88187-Flow cytometry interpretation, 2 to 8 markers

BLPF 35258

**B-Cell Lymphoma, FISH, Blood or Bone Marrow**

**Specimen Requirements:** Submit only 1 of the following specimens:  
Specimen Type: Blood  
Container/Tube: Green top (sodium heparin)  
Specimen Volume: 7-10 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.  
Specimen Type: Bone marrow  
Container/Tube: Green top (sodium heparin)  
Specimen Volume: 1-2 mL  
Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.  
Acceptable: Specimen Type: Touch prep or fresh tissue

**Specimen Minimum Volume:** Blood: 2 mL Bone Marrow: 1 mL

**Transport Temperature:**  
Blood: 2 mL Bone Marrow: 1 mL

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);  
88274 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

BLYMF 35283

**B-Cell Lymphoma, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens:  
Specimen Type: Lymph node Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.  
Specimen Type: Solid tumor Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with...
alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides
Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections
placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** See CPT Code Information for each probe set.

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**IABCS 88800**

**B-Cell Phenotyping Profile for Immunodeficiency and Immune Competence Assessment, Blood**

**Specimen Requirements:** Two separate EDTA specimens are required: 1 refrigerated and 1 at
ambient transport temperature. For serial monitoring, we recommend that specimens be drawn at
the same time of day. Specimen Type: Whole blood for TBBS / Quantitative Lymphocyte Subsets: T,
B, and NK Container/Tube: 4 mL Lavender top (EDTA) Specimen Volume: 3 mL Collection
Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Label specimen as blood for TBBS /
Quantitative Lymphocyte Subsets: T, B, and NK. Specimen Stability Information: Ambient <52 hours
Specimen Type: Whole blood for IABC / B-Cell Phenotyping Screen for Immunodeficiency and Immune
Competence Assessment, Blood Container/Tube: Lavender top (EDTA) Specimen Volume: < or =14
years: 4 mL >14 years: 10 mL Collection Instructions: 1. Send specimen in original tube. Do not aliquot.
2. Label specimen as blood for IABC / B-Cell Phenotyping Screen for Immunodeficiency and Immune
Competence Assessment, Blood. Specimen Stability Information: Refrigerated <48 hours

**Specimen Minimum Volume:** TBBS: 1 mL IABC < or =14 years: 3 mL >14 years: 5 mL

**Transport Temperature:**
Whole Blood EDTA Varies 48 hours

**CPT Code Information:** T- and B-Cell Quantitation by Flow Cytometry; 86355-B cells, total count;
86357-Natural killer (NK) cells, total count; 86359-T cells, total count; 86360-Absolute CD4/CD8 count
with ratio; ; B-Cell Phenotyping Screen for Immunodeficiency and Immune Competence Assessment,
Blood; 88184-Flow cytometry, first marker; 88185 x 7-Flow cytometry, each additional marker; ;
Common Variable Immunodeficiency Confirmation Flow Panel; 88184-Flow cytometry, first marker (if
appropriate); 88185 x 2-Flow cytometry, each additional marker (if appropriate);

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**BALLF 35256**

**B-Lymphoblastic Leukemia/Lymphoma, FISH**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood
Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1.
Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the
viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin)
Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other
anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL Bone Marrow: 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

### BNP
#### B-Type Natriuretic Peptide (BNP), Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge, remove plasma from cells, and freeze immediately or within 7 hours from time of collection. Additional Information: Include patient's age and sex.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Plasma EDTA Frozen 365 days

**CPT Code Information:** 83880

### BABG
#### Babesia microti IgG Antibodies, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86753

### LBAB
#### Babesia species, Molecular Detection, PCR, Blood

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
**FBACS** 75397

**Baclofen, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in a preservative-free plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 120 days
- Ambient 14 days

**CPT Code Information:** 87798 x 3

**GEN** 8108

**Bacterial Culture, Aerobic**

**Specimen Requirements:** Preferred: Specimen Type: Closed abscess Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: Aspirate the abscess contents with a syringe. Acceptable: Supplies: Culturette (BBL Culture Swab) (T092) Specimen Type: Open abscess, swab, tissue, or fluid Sources: Abscess, aspirate, lesion, or wound Container/Tube: Sterile container or culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium) (T092) Collection Instructions: For most open lesions and abscesses, remove superficial flora by decontaminating skin before collecting a specimen from advancing margin or base. Additional Information: 1. If submitting a specimen from a source contaminated with usual flora, send at refrigerated temperature. 2. Refrigerated specimens are not suitable for isolation of Neisseria species.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Ambient (preferred) 24 hours
- Refrigerated 24 hours

**CPT Code Information:** 80369

**SPUT** 8095

**Bacterial Culture, Aerobic, Respiratory**

**Specimen Requirements:** Patient Preparation: Have patient rinse his/her mouth with water
immediately prior to specimen collection. This reduces the number of contaminating oropharyngeal bacteria. Specimen Type: Respiratory Sources: Sputum, bronchoalveolar lavage, trachea, endotracheal tube, etc. Container/Tube: Sterile container Specimen Volume: Entire specimen Collection Instructions: An early-morning expectorated sputum is preferred.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

Varies Refrigerated 24 hours

**CPT Code Information:** 87070-Bacteria, Culture, Aerobic, Respiratory ; 87077-Identification Commercial Kit (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria Identification (if appropriate); 87153-Aerobe Ident by Sequencing (if appropriate); 87077-Additional Identification Procedure (if appropriate); 87147 x 3-Serologic Agglut Method 1 Ident (if appropriate); 87147-Serologic Agglut Method 2 Ident (if appropriate); 87147 x 4-Serologic Agglut Method 3 Ident (if appropriate); 87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate); 87077-Identification Staphylococcus (if appropriate); 87077-Identification Streptococcus (if appropriate); 87185-Beta Lactamase (if appropriate); 87798 x 2-KPC and NDM PCR (if appropriate); 87185-Carbapenemase detection, Carba NP test (if appropriate); 87798-Identification by PCR (if appropriate); 87150-Gram-Negative Resistance Genes, PCR (if appropriate); 87798 x 2-OXA-48 and VIM PCR (if appropriate);

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**Bacterial Culture, Aerobic, Urine**

**Specimen Requirements:** Supplies: Urine tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 1 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 24 hours

Ambient 2 hours

**CPT Code Information:** 87086-Bacterial Culture, Aerobic, Urine; 87077-Identification Commercial Kit (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria Identification (if appropriate); 87153-Aerobe Ident by Sequencing (if appropriate); 87077-Additional Identification Procedure (if appropriate); 87147 x 3-Serologic Agglut Method 1 Ident (if appropriate); 87147-Serologic Agglut Method 2 Ident (if appropriate); 87147 x 4-Serologic Agglut Method 3 Ident (if appropriate); 87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate); 87077-Identification Staphylococcus (if appropriate); 87077-Identification Streptococcus (if appropriate); 87185-Beta Lactamase (if appropriate); 87798 x 2-KPC and NDM PCR (if appropriate); 87185-Carbapenemase detection, Carba NP test (if appropriate); 87798-Identification by PCR (if appropriate); 87150-Gram-Negative Resistance Genes, PCR (if appropriate); 87798 x 2-OXA-48 and VIM PCR (if appropriate);

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**Bacterial Culture, Anaerobic**

**Specimen Requirements:** Specimen Types: Abscesses, percutaneous transtracheal aspirates, sterile body fluids, suprapubic aspirations, or wounds Supplies: Anaerobe Transport Tube (T588) Collection Instructions: Specimen should be obtained by using a needle and syringe from a source not normally colonized by anaerobes.

**Transport Temperature:**

Current as of January 8, 2019 2:38 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
CPT Code Information: 87075-Bacterial Culture, Anaerobic; 87076-Id MALDI-TOF Mass Spec Anaerobe (if appropriate); 87153-Anaerobe Ident by Sequencing (if appropriate); 87176-Tissue Processing (if appropriate); 87185-Beta lactamase (if appropriate); 87798-Identification by PCR (if appropriate);

CFRC 89653  Bacterial Culture, Cystic Fibrosis, Respiratory  
Specimen Requirements: Submit only 1 of the following specimens: Preferred: Specimen Type: Sputum, expectorated or induced Container/Tube: Sterile container Specimen Volume: Entire collection Acceptable: Specimen Type: Bronchial aspirate or washing, bronchoalveolar lavage, endotracheal, or tracheal Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Throat swab Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab

Specimen Minimum Volume: 2 mL

Transport Temperature:  
Varies Refrigerated 48 hours

CPT Code Information: 87070-Bacteria, culture, cystic fibrosis, respiratory; 87077-Identification commercial kit (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria Identification (if appropriate); 87077-Additional Identification procedure (if appropriate); 87077-Identification Staphylococcus (if appropriate); 87077-Identification Streptococcus (if appropriate); 87147 x 5-Serologic agglut method 1 ident (if appropriate); 87147-Serologic agglut method 2 ident (if appropriate); 87147 x 4-Serologic agglut method 3 ident (if appropriate); 87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate); 87153-Aerobe Ident by sequencing (if appropriate); 87185-Beta lactamase (if appropriate); 87185-Carbapenemase detection, Carba NP test (if appropriate); 87798 x 2-KPC and NDM PCR (if appropriate); 87798 x 2-OXA-48 and VIM PCR (if appropriate);

PFGE 80349  Bacterial Typing by Pulsed-Field Gel Electrophoresis (PFGES)  
Specimen Requirements: Supplies: Infectious Container, Large (T146) Container/Tube: Agar slant Specimen Volume: Isolates on separate agar slants in pure culture Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures. Additional Information: 1. Each slant must be submitted under a separate order. 2. Original isolates should be saved at the client site if additional PFGE testing may be needed (eg, to compare to future outbreak isolates that may occur).

Transport Temperature:  
Varies Ambient (preferred) Refrigerated

CPT Code Information: 87152

BTWGS 65162  Bacterial Typing by Whole Genome Sequencing  
Specimen Requirements: Supplies: Infectious Container, Large (T146) Container/Tube: Agar
slant Specimen Volume: Isolates on separate agar slants in pure culture Collection Instructions: 1. Isolate the bacteria (must be Staphylococcus aureus, Acinetobacter baumannii, Klebsiella pneumoniae, Legionella pneumophila, or Clostridioides (Clostridium) difficile. 2. Bacterial organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 0010U-Bacterial Typing, Whole Genome Seq; 87900-Bioinformatics Reanalysis (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87153-Aerobe ident by sequencing (if appropriate); 87077-Additional identification procedure (if appropriate);

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**BAHG**

**Bahia Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**BYST**

**Baker's Yeast, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**BCYP**

**Bald Cypress, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

BAMB
82879
Bamboo Shoot, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

FBANG
57635
Banana IgG
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

BANA
82746
Banana, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
**BAP1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Barbiturates Confirmation, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80345; G0480 (if appropriate);

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**Barbiturates Confirmation, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order BARBX / Barbiturates Confirmation, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

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CPT Code Information: 80345; G0480 (if appropriate);

FBARS 57742

Barium, Serum

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a EDTA metal-free royal blue-top tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL metal-free EDTA plasma refrigerated in a plastic vial. Serum Draw blood in a metal-free royal blue-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL metal-free serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

CPT Code Information: 83018

BGRS 82785

Barley Grass, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

FBARG 57578

Barley IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

CPT Code Information: 86001
Barley, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Bartonella Antibody Panel, IFA CSF

**Specimen Requirements:** Specimen Type: Spinal Fluid Sources: CSF Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Collect 1 mL of spinal fluid (CSF). Ship refrigerate

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86611 x 4

Bartonella Antibody Panel, IgG and IgM, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86611 x 4

Bartonella, Molecular Detection, PCR

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Bartonella species DNA is unlikely. Submit only 1 of the following specimens: Specimen Type: Fresh tissue or biopsy Sources: Heart valve, liver, lymph node, spleen, or skin tissue papule/lesion/nodule Container/Tube: Sterile container Specimen Volume: Entire collection or 5 mm(3) Collection Instructions: Collect fresh tissue specimen. Specimen Stability Information: Refrigerated (preferred) <7 days/ Frozen <7 days Supplies: Tissue Block Container (T553) Specimen Type: Paraffin-embedded tissue block Sources: Heart valve,
liver, lymph node, spleen, or skin tissue papule/lesion/nodule

**Container/Tube:** Sterile container for cut sections or Tissue Block Container (T553)

**Specimen Volume:** Submit formalin-fixed, paraffin-embedded tissue block to be cut and returned. Alternatively, perform cuts and place two to five 10-micron sections in a sterile container for submission

**Specimen Stability Information:** Ambient (preferred)/Refrigerated

**Specimen Type:** Fluid Sources: Cerebrospinal or ocular (e.g., vitreous humor fluid)

**Container/Tube:** Sterile vial

**Specimen Volume:** 0.5 mL

**Specimen Stability Information:** Refrigerated (preferred) <7 days/Frozen <7 days

**Specimen Type:** Synovial fluid

**Container/Tube:** Preferred: Lavender top (EDTA) Acceptable: Pink top (EDTA), royal blue top (EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile container

**Specimen Volume:** 0.5 mL

**Collection Instructions:** Send specimen in original tube (preferred). Specimen Stability Information: Refrigerated <7 days (preferred)/Frozen <7 days

**Specimen Minimum Volume:** Fresh tissue or biopsy: 5 mm(3) Paraffin-embedded tissue block: two 10-micron sections Fluid: 0.5 mL

**Transport Temperature:** Varies

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**CPT Code Information:** 87801

**BARTB 89983**

**Bartonella, Molecular Detection, PCR, Blood**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Bartonella species DNA is unlikely. Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot

**Specimen Volume:** 1 mL

**Collection Instructions:** Send specimen in original tube (preferred).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** Whole Blood EDTA Refrigerated (preferred) 7 days

- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 87801

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**BMAMA 113630**

**Basic Metabolic Panel, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Volume:** 0.5 mL

**Collection Instructions:** 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:** Serum Refrigerated 24 hours

**CPT Code Information:** 84132; 84295; 82435; 82374; 84520; 82565; 82310; 82947;

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**FBSLG 57660**

**Basil IgG**

Current as of January 8, 2019 2:38 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**BASL**

**82489**

**Basil, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FBBLE**

**57546**

**Bass Black (Sea Bass) (Centropristis striata) IgE**

**Specimen Requirements:** Draw blood in a plain red top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**BAYL**

**82601**

**Bay Leaf, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Serum Refrigerated (preferred)  14 days
  Frozen 90 days

CPT Code Information: 86003

FBWME  57583  Bayberry/Wax Myrtle (Myrica spp) IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
  Serum Refrigerated (preferred)  28 days
  Frozen 365 days
  Ambient 28 days

CPT Code Information: 86003

BCL2  70362  BCL-2 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
  TECHONLY Ambient
    (preferred)
    Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

BCL6  70363  BCL-6 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
  TECHONLY Ambient
    (preferred)
    Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
BCR/ABL, p190, mRNA Detection, Reverse Transcription-PCR (RT-PCR), Quantitative, Monitoring Assay

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Refrigerated (preferred) 5 days
- Ambient 72 hours

**CPT Code Information:** 81207-BCR/ABL1 (t[9;22]) (eg, chronic myelogenous leukemia) translocation analysis; minor breakpoint, qualitative or quantitative

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**BCR/ABL1 Qualitative Diagnostic Assay with Reflex to BCR/ABL1 p190 Quantitative Assay or BCR/ABL1 p210 Quantitative Assay**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood: 4 mL Bone Marrow: 1 mL

**Transport Temperature:**
- Refrigerated (preferred) 72 hours
- Ambient 72 hours

**CPT Code Information:** 81208-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; other breakpoint, qualitative ; 81206-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; major breakpoint, qualitative ; 81207-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; minor breakpoint, qualitative ; 81206-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; major breakpoint, quantitative (If appropriate); 81207-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; minor breakpoint, quantitative (If appropriate);

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**BCR/ABL1 Translocation (9;22), FISH**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.
Specimen Minimum Volume: Blood: 2 mL. Bone Marrow: 1 mL

Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/Modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

B190R
BCR/ABL1, p190, mRNA Detection, Reverse Transcription-PCR (RT-PCR), Quantitative, Reflex

Specimen Requirements: Only orderable as a reflex. See BCRFX / BCR/ABL1 Qualitative Diagnostic Assay with Reflex to BCR/ABL1 p190 Quantitative Assay or BCR/ABL1 p210.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Refrigerated (preferred) 72 hours
Ambient 72 hours

CPT Code Information: 81207-BCR/ABL1 (t[9;22]) (eg, chronic myelogenous leukemia) translocation analysis; minor breakpoint, qualitative or quantitative

BCRAB
BCR/ABL1, p210, mRNA Detection, Reverse Transcription-PCR (RT-PCR), Quantitative, Monitoring Chronic Myeloid Leukemia (CML), Varies

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

Specimen Minimum Volume: Blood: 4 mL. Bone Marrow: 1 mL

Transport Temperature:
Varies Refrigerated (preferred) 72 hours
Ambient 72 hours

CPT Code Information: 81206-BCR/ABL1 (t[9;22]) (eg, chronic myelogenous leukemia) translocation analysis; major breakpoint, qualitative or quantitative
**BCR/ABL1, p210, mRNA Detection, Reverse Transcription-PCR (RT-PCR), Quantitative, Reflex**

**Specimen Requirements:** Only orderable as a reflex. See BCRFX / BCR/ABL1 Qualitative Diagnostic Assay with Reflex to BCR/ABL1 p190 Quantitative Assay or BCR/ABL1 p210.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Refrigerated (preferred) 72 hours
- Ambient 72 hours

**CPT Code Information:** 81206-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; major breakpoint, qualitative or quantitative

**BCR/ABL1, Qualitative, Diagnostic Assay**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Refrigerated (preferred) 5 days
- Ambient 5 days

**CPT Code Information:** 81206-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; major breakpoint, qualitative or quantitative; 81207-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; minor breakpoint, qualitative or quantitative; 81208-BCR/ABL1 (t(9;22)) (eg, chronic myelogenous leukemia) translocation analysis; other breakpoint, qualitative or quantitative;

**BCR/ABL1, Tyrosine Kinase Inhibitor Resistance, Kinase Domain Mutation Screen, Sanger Sequencing**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: EDTA (lavender top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Acceptable: Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Refrigerated (preferred) 5 days
- Ambient 72 hours
**CPT Code Information:** 81170-ABL1 (ABL proto-ongene 1, non-receptor tyrosine kinase)(eg, acquired imatinib tyrosine kinase inhibitor resistance), gene analysis, variants in the kinase domain

**FBEBE 57521**
**Bean Black (Phaseolus spp) IgE**
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

**FBCGG 57673**
**Bean Coffee Green IgG**
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

**FBGSG 57522**
**Bean Green/String IgG**
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

**FBKG 57662**
**Bean Kidney IgG**
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**FBLME 57523**

**Bean Lima (Phaseolus limensis) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**FNBE 57937**

**Bean Navy/White (Phaseolus vulgaris) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**FBNWG 57655**

**Bean Navy/White IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days
Beckwith-Wiedemann Syndrome (BWS)/Russell-Silver Syndrome (RSS) Molecular Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood.
2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Minimum Volume: Blood: 1 mL/Amniotic Fluid: 10 mL
Transport Temperature: Varies

CPT Code Information: 81401 H19 (imprinted maternally expressed transcript [non-protein coding]) (eg, Beckwith-Wiedemann syndrome), methylation analysis; ; 81401 KCNQ1OT1 (KCNQ1 overlapping transcript 1 [non-protein coding]) (eg, Beckwith-Wiedemann syndrome) methylation analysis ; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

Beech, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature: Varies

CPT Code Information: 81401 H19 (imprinted maternally expressed transcript [non-protein coding]) (eg, Beckwith-Wiedemann syndrome), methylation analysis; ; 81401 KCNQ1OT1 (KCNQ1 overlapping transcript 1 [non-protein coding]) (eg, Beckwith-Wiedemann syndrome) methylation analysis ; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**Beef IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

**Beef Neutral-Regular Insulin, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**Beef, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
**Beet Root IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**Beets (Beetroot), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Benzene as Phenol, Occupational Exposure, Urine**

**Specimen Requirements:** Collect 10 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 82570/Creatinine; 84600/Volatiles;

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**Benzene, Occupational Exposure, Blood**

**Specimen Requirements:** Draw blood in a green-top (sodium heparin) tube(s) and send 20 mL in two tubes of sodium heparin whole blood refrigerated. Blood should be drawn at end of shift. Tubes should be filled to prevent loss of volatile compound into headspace.

**Specimen Minimum Volume:** 2.5 mL (in two tubes)

**Transport Temperature:**
WB Sodium Heparin Refrigerated (preferred) 14 days
Frozen 365 days

CPT Code Information: 84600

**BENZX**

62714

**Benzodiazepines Confirmation, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

CPT Code Information: 80346; G0480 (if appropriate);

**BENZU**

80370

**Benzodiazepines Confirmation, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 4. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

CPT Code Information: 80346; G0480 (if appropriate);

**FBENZ**

90092

**Benztropine (Cogentin), Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Varies Refrigerated (preferred) 14 days
BEREP  70364  
**Ber-EP4 (Epithelial Cell Adhesion Molecule/EPCAM) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information:** 80375

BBEET  82838  
**Berlin Beetle, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

BERG  82892  
**Bermuda Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003
**Beryllium, Blood**

**Specimen Requirements:** Draw blood in a metal free, royal blue-top with EDTA tube(s). Send 2 mL of EDTA whole blood refrigerated.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole Blood EDTA - Metal Free (ERB) Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 83018

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**Beta Globin Gene Sequencing, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD, sodium heparin Specimen Volume: 3 mL Collection Instructions: Do not transfer blood to other containers

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated 14 days

**CPT Code Information:** 81364-HBB (hemoglobin, beta) full sequence

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**Beta Lactoglobulin IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

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**Beta-2 Glycoprotein 1 Antibodies, IgA, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
CPT Code Information: 86146

**B2GMG** 62926  
**Beta-2 Glycoprotein 1 Antibodies, IgG and IgM, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen  
Volume: 0.5 mL  
**Specimen Minimum Volume:** 0.4 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 21 days  
Frozen 21 days  

CPT Code Information: 86146 x 2

**GB2GP** 86182  
**Beta-2 Glycoprotein 1 Antibodies, IgG, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen  
Volume: 0.5 mL  
**Specimen Minimum Volume:** 0.4 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 21 days  
Frozen 21 days  

CPT Code Information: 86146

**MB2GP** 86181  
**Beta-2 Glycoprotein 1 Antibodies, IgM, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen  
Volume: 0.5 mL  
**Specimen Minimum Volume:** 0.4 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 21 days  
Frozen 21 days  

CPT Code Information: 86146

**B2MU** 602026  
**Beta-2 Microglobulin (B2M), Urine**  
**Specimen Requirements:** Supplies: Urine Tubes, 5 mL Container/Tube: Plastic, urine tube  
Specimen Volume: 3 mL Collection Instructions: 1. Patient should empty bladder. 2. Have patient drink at least 0.5 liters of water. 3. Within 1 hour, collect a random urine specimen. 4. Add 1 M NaOH as preservative to the collection. This preservative is intended to achieve a pH of between approximately 6 and 8.
Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Frozen (preferred) 14 days
Refrigerated 48 hours

CPT Code Information: 82232

BETA2 80351
Beta-2 Transferrin: Detection of Spinal Fluid in Other Body Fluid

Specimen Requirements: Specimen Type: Body fluid Sources: Nasal, otic, wound, etc Container/Tube: Preferred: Sterile container, syringe, test tube, or microtube Acceptable: Plain cotton swab or gauze Specimen Volume: 0.5 mL Collection Instructions: 1. If submitting a syringe, remove needle. Add cap to end of syringe. 2. If direct collection is not feasible, specimen may be collected using a plain cotton swab or gauze. 3. If gauze is used to collect specimen, circle area on the gauze where specimen was collected. 4. Place cotton swab or gauze in as small a container as possible (eg, plain test tube or collection container). 5. Do not collect specimen with a culture swab. 6. Do not add any liquid to the swab or gauze. Additional Information: 1. Samples collected from above the shoulders risk salivary contamination, which can degrade the beta-2 transferrin protein. These samples should be frozen immediately following collection and kept frozen until testing is performed. 2. Although results may be obtainable on smaller specimens (perhaps as little as 0.05 mL, depending on the protein concentrations and percentage of spinal fluid in the specimen), reliable results are best obtained with an adequate specimen volume. 3. Samples collected with additives such as microbiology media (eg, Stuart or Amies liquid medium) or TransFix/EDTA (used for analyses in flow cytometry) yield uninterpretable results and will be rejected.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Body Fluid Frozen (preferred)
Ambient
Refrigerated

CPT Code Information: 86335

B2M 9234
Beta-2-Microglobulin (Beta-2-M), Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

CPT Code Information: 82232
Beta-2-Microglobulin (Beta-2-M), Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 82232

Beta-Amyloid Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Beta-Catenin (CTNNB1) Mutation Analysis, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Specimen Type: Slides Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nonbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology (direct smears or ThinPrep) Container/Tube: Cytology slide Slides: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** See Specimen Required field.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81403; 88381;

Beta-Catenin Immunostain, Technical Component Only

**CPT Code Information:**
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CTX 83175
Beta-CrossLaps (Beta-CTx), Serum
Specimen Requirements: Patient Preparation: 1. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. 2. Fasting Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Draw specimen prior to 10 a.m.
Specimen Minimum Volume: 0.4 mL
Transport Temperature:
Serum Frozen (preferred) 90 days Refrigerated 72 hours

CPT Code Information: 82523

BGAW 60987
Beta-Galactosidase, Blood
Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Whole blood Ambient (preferred) 7 days Refrigerated 7 days

CPT Code Information: 82657

BGABS 60986
Beta-Galactosidase, Blood Spot
Specimen Requirements: Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood spot collection card (T493) Acceptable: Ahlstrom 226 Filter Paper and Whatman Protein Saver 903 Paper Specimen Volume: 2 blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is fingerstick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
Specimen Minimum Volume: 1 blood spot

Transport Temperature:
Whole blood  Ambient (preferred)  28 days
Frozen  90 days
Refrigerated  90 days

CPT Code Information: 82657

Beta-Galactosidase, Leukocytes

Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Whole Blood ACD  Refrigerated (preferred)  72 hours
Ambient  72 hours

CPT Code Information: 82657

Beta-Globin Cluster Locus Deletion/Duplication

Specimen Requirements: Specimen Type: Peripheral blood Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in the original tube.

Specimen Minimum Volume: 2 mL

Transport Temperature: Varies Varies

CPT Code Information: 81363-HBB (hemoglobin, beta, beta-globin) (eg, beta thalassemia), duplication/deletion analysis

Beta-Globin Cluster Locus Deletion/Duplication, Blood

Specimen Requirements: Only orderable as a reflex. For more information see: -HAEVP / Hemolytic Anemia Evaluation -HBECL / Hemoglobin Electrophoresis Cascade, Blood -MEVP / Methemoglobinemia Evaluation -REVE / Erythrocytosis Evaluation -THEVP / Thalassemia and Hemoglobinopathy Evaluation Specimen Type: Peripheral blood Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in the original tube.

Specimen Minimum Volume: 2 mL

Transport Temperature: Whole Blood EDTA  Refrigerated
CPT Code Information: 81363-HBB (hemoglobin, beta, beta-globin) (eg, beta thalassemia), duplication/deletion analysis;

WBSQR 47959

Beta-Globin Gene Sequencing, Blood

Specimen Requirements: Only orderable as a reflex. For more information see: -HAEVP / Hemolytic Anemia Evaluation -HBELC / Hemoglobin Electrophoresis Cascade, Blood -MEVP / Methemoglobinemia Evaluation -REVE / Erythrocytosis Evaluation -THEVP / Thalassemia and Hemoglobinopathy Evaluation

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 14 days

CPT Code Information: 81364-HBB (hemoglobin, beta) full sequence

BGL 8788

Beta-Glucosidase, Leukocytes

Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Whole Blood ACD Refrigerated (preferred) 4 days
Ambient 48 hours

CPT Code Information: 82963

BHCG 61718

Beta-Human Chorionic Gonadotropin, Quantitative, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 180 days

CPT Code Information: 84702

BHSF 8877

Beta-Human Chorionic Gonadotropin, Quantitative, Spinal Fluid

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take
multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Sterile vial Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 28 days
Frozen 14 days

**CPT Code Information:** 84702

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**BHYD 9251**

**Beta-Hydroxybutyrate, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Frozen (preferred) 7 days
Refrigerated 7 days

**CPT Code Information:** 82010

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**BLACT 8118**

**Beta-Lactamase**

**Specimen Requirements:** Specimen Type: Pure culture of actively growing Enterococcus species, Haemophilus influenzae, Moraxella catarrhalis, Neisseria gonorrhoeae, or Staphylococcus species Container/Tube: Slant Specimen Volume: Entire specimen Collection Instructions: Send specimen in an approved mailing container and label as an etiologic agent/infectious substance.

**Specimen Minimum Volume:** NA

**Transport Temperature:**
Varies Ambient (preferred)
Refrigerated

**CPT Code Information:** 87185

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**BLAC 82896**

**Beta-Lactoglobulin, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

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Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
IBETH

Bethesda Units

**Specimen Requirements:** Only orderable as part of a profile. For more information see: BDIAL / Bleeding Diathesis Profile, Limited PROCT / Prolonged Clot Time Profile LUPPR / Lupus Anticoagulant Profile F8INH / Factor VIII Inhibitor Evaluation F9INH / Factor IX Inhibitor Evaluation

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 86008

HCO3

Bicarbonate, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated 24 hours

**CPT Code Information:** 82374

FBIUR

Bicarbonate, Urine

**Specimen Requirements:** Send 1 mL from a random urine collection. Send specimen refrigerated in a preservative free plastic urine container.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 30 days
Frozen 30 days
Ambient 48 hours

**CPT Code Information:** 82374

BAPS

Bile Acid Profile, Serum

**Specimen Requirements:** Patient Preparation: Patient must be fasting for 12 to 14 hours. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL
Transport Temperature:
Serum Refrigerated (preferred) 90 days
Ambient 90 days
Frozen 90 days

CPT Code Information: 82542

**BAIPD**

**Bile Acids for Peroxisomal Disorders, Serum**

**Specimen Requirements:** Patient Preparation: Patient must be fasting for 12-14 hours. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial

**Specimen Volume:** 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 90 days
Ambient 90 days
Frozen 90 days

**CPT Code Information:** 82542

**BA48F**

**Bile Acids, Bowel Dysfunction, 48 Hour, Feces**

**Specimen Requirements:** Patient Preparation: For 3 days prior to and during the collection period: 1. Patient should be on a fat-controlled diet (100-150 g fat per day) 2. No laxatives (particularly mineral oil and castor oil) 3. No synthetic fat substitutes (eg, Olestra) or fat-blocking nutritional supplements Supplies: Stool Containers - 24, 48, 72 Hours Kit (T291) Collection Container/Tube: Stool container (T291); complies with shipping requirements, do not use other containers Specimen Volume: Entire 48-hour collection Collection Instructions: 1. Do not use other containers. 2. All containers must be sent together. 3. The entire collection must contain at least 5 g of feces. 4. The number of containers sent should be indicated on the labels (1 of 4, for example). Additional Information: 1. Patient may store sample at refrigerate temperature during collection period. 2. Barium interferes with test procedure; a waiting period of 48 hours before stool collection analysis is recommended.

**Specimen Minimum Volume:** 5 g

**Transport Temperature:**
Fecal Frozen 30 days

**CPT Code Information:** 82542

**BAFS**

**Bile Acids, Fractionated and Total, Serum**

**Specimen Requirements:** Patient Preparation: Patient must be fasting for 12-14 hours. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial

**Specimen Volume:** 0.5 mL

**Specimen Minimum Volume:** 0.3 mL
**Bile Acids, Total, Serum**

**Specimen Requirements:**
- Patient Preparation: 12-hour minimum fasting is required.
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top Submission Container/Tube: Plastic vial

**Specimen Volume:** 0.5 mL

**Collection Instructions:**
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days
- Ambient 24 hours

**CPT Code Information:** 82239

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**Biliary Tract Malignancy, FISH**

**Specimen Requirements:**
- Supplies: PreservCyt Vial (T536)
- Specimen Type: Bile duct brushing, bile duct aspirate, hepatobiliary brushing, or hepatobiliary aspirate
- Container/Tube: Separate ThinPrep vial containing 20 mL PreservCyt or CytoLyt solution (T536) for each specimen
- Specimen Volume: Entire collection

**Collection Instructions:**
- Label each specimen with specific source (eg, right hepatic duct or common bile duct).
- Note: Pancreatic mass, pancreatic cyst, or pancreatic fine-needle aspirate

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**Bile Acids, Urine**

**Specimen Requirements:**
- Collection Container: Plastic urine container
- Specimen Volume: 5-25 mL

**Collection Instructions:**
- Collect 5-25 mL random urine without preservative.
- Ship frozen in a plastic container.
- NOTE: Submit with specimen:
  - 1. Clinical history/Preliminary diagnosis -Because URSO can mask detection of bile acid synthetic defects it is preferable for patients to be off Urso or Actigall for 5 days before sample collection.
  - 2. If possible, send Urine & Serum (ZW166 - Bile Acids Serum, referral lab code 503).
  - Urine is analyzed for all patients - if Urine shows evidence of a metabolic abnormality, Serum will be tested. Urine and serum must be ordered separately as they are 2 separate tests with separate charges.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Frozen (preferred)
- Ambient 48 hours
- Refrigerated

**CPT Code Information:** 83789
specimens are not acceptable.

**Specimen Minimum Volume:** 20 mL

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88377

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**FBILM 70587**

**Biliary Tract Malignancy-Cytology, FISH**

**Specimen Requirements:** Supplies: PreservCyt Vial (T536) CytoLyt Solution (T564) Specimen Type: Bile duct brushing, bile duct aspirate, hepatobiliary brushing, or hepatobiliary aspirate Container/Tube: Separate ThinPrep vial containing 20 mL PreservCyt (T536) or CytoLyt solution (T564) for each specimen Specimen Volume: Entire collection Collection Instructions: Label with site specimen was collected from (eg, right hepatic duct or common bile duct).

**Specimen Minimum Volume:** 20 mL

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88112; 88377-BILMA/BILMB/etc (if appropriate);

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**BILID 81787**

**Bilirubin Direct, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber tube (T192) Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 24 hours
  - Frozen 30 days
  - Ambient 6 hours

**CPT Code Information:** 82248

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**AFBIL 8390**

**Bilirubin, Amniotic Fluid**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Amniotic fluid container Submission Container/Tube: Opaque, amber vial (T192) Specimen Volume: 3.5 mL Collection Instructions: 1. Centrifuge, separate supernatant, and send both supernatant and sediment. 2. Label specimens as sediment and supernatant.
**BFBL 34621**

**Bilirubin, Body Fluid**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Body fluid container Submission Container/Tube: Opaque, amber vial (T192)

Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge, separate supernatant, and send both supernatant and sediment. 2. Label specimens as sediment and supernatant.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Body Fluid Frozen (preferred) 70 days
Refrigerated 14 days

**CPT Code Information:** 82247

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**BILI3 8452**

**Bilirubin, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 24 hours
Frozen 30 days
Ambient 6 hours

**CPT Code Information:** 82247-Bilirubin, total; 82248-Bilirubin, direct;

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**BILIT 81785**

**Bilirubin, Total, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
**UBILU 8578**

**Bilirubin, Urine**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Submission Container/Tube: Amber vial (T192) Specimen Volume: 5 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred)
- Frozen

**CPT Code Information:** 82247

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**BTDZ 35375**

**Biotinidase Deficiency, BTD Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81002

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**BIOTS 88205**

**Biotinidase, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down immediately and remove serum.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 21 days
- Refrigerated 5 days

**CPT Code Information:** 81404-BTD (biotinidase) (eg, biotinidase deficiency), full gene sequence
**Bird Fancier's Precipitin Panel I**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

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**Birt-Hogg-Dube Syndrome, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Specimen preferred to arrive within 96 hours of collection. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

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**Bismuth, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Collection Container/Tube: Preferred: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 0.8 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
CPT Code Information: 83018

FBIS 91125  Bismuth, Serum
Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in an EDTA metal-free royal blue-top tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL of metal-free EDTA plasma refrigerated. Serum Draw blood in a metal-free plain royal blue top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of metal-free serum refrigerated.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days
Frozen  180 days
Ambient  72 hours

CPT Code Information: 83018

FBISU 91142  Bismuth, Urine
Specimen Requirements: 10 mL from a random or spot urine collected in a metal-free or acid-washed container. Send specimen refrigerated.

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen  180 days
Ambient  72 hours

CPT Code Information: 83018

LCBKP 89982  BK Virus, Molecular Detection, PCR, Plasma
Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Spin down and separate plasma within 24 hours of collection.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma EDTA Refrigerated (preferred) 14 days
Frozen  14 days

CPT Code Information: 87798
**BK Virus, Molecular Detection, PCR, Urine**

**Specimen Requirements:** Container/Tube: Sterile urine container Specimen Volume: 1 mL
Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87798

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**BK Virus, Molecular Detection, Quantitative, PCR, Plasma**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL
Collection Instructions: Separate plasma within 24 hours of collection.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87799

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**BK Virus, Molecular Detection, Quantitative, PCR, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 1 mL Collection Instructions: 1. Collect a random urine specimen.
2. No preservative.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87799

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**Black/White Pepper, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days
CPT Code Information: 86003

**BLACK 82361**

Blackberry, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**BLAST 35793**

Blastomyces Antibody by EIA, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86612

**SBL 8237**

Blastomyces Antibody by Immunodiffusion, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86612

**CBL 81541**

Blastomyces Antibody by Immunodiffusion, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86612
CSF Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86612

BDIAL 83094

Bleeding Diathesis Profile, Limited

Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient should not be receiving Coumadin or heparin. If so, please note. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 5 mL in 5 plastic vials each containing 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimens immediately at < or =-40° C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back.

Specimen Minimum Volume: Internal: Two 4.5 mL 3.2% Sodium Citrate External: 4 mL in 4 plastic vials, 1 mL each

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85240-Coagulation factor VIII assay; 85246-von Willebrand factor antigen; 85291-Clot solubility factor XIII; 85366-Soluble fibrin monomer; 85379-D-dimer; 85384-Fibrinogen; 85390-26-Special coagulation interpretation; 85397-von Willebrand factor activity; 85610-PT; 85670-Thrombin time; 85730-APTT; 85210-Factor II (if appropriate); 85220-Factor V (if appropriate); 85230-Factor VII (if appropriate); 85245-Ristocetin cofactor (if appropriate); 85247-von Willebrand factor multimer (if appropriate); 85250-Factor IX (if appropriate); 85260-Factor X (if appropriate); 85270-Factor XI (if appropriate); 85270-Factor XII (if appropriate); 85335-Bethesda units (if appropriate); 85335-Factor II inhibitor screen (if appropriate); 85335-Factor V inhibitor screen (if appropriate); 85335-Factor VII inhibitor screen (if appropriate); 85335-Factor VIII inhibitor screen (if appropriate); 85335-Factor IX inhibitor screen (if appropriate); 85335-Factor X inhibitor screen (if appropriate); 85335-Factor XI inhibitor screen (if appropriate); 85335-Factor XII inhibitor screen (if appropriate); 85410-Alpha-2 plasmin inhibitor (if appropriate); 85597-Platelet neutralization for lupus inhibitor (if appropriate); 85598-Staclot LA (if appropriate); 85611-PT mix 1:1 (if appropriate); 85613-DRVVT (if appropriate); 85613-DRVVT mix (if appropriate); 85613-DRVVT confirm (if appropriate); 85635-Reptilase time (if appropriate); 85732-APTT mix 1:1 (if appropriate);

BTROP 82374

Blomia tropicalis, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
**Blood Urea Nitrogen (BUN), Serum**

**Specimen Requirements:** Patient Preparation: Fasting Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 365 days

**CPT Code Information:** 84520

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**Blood Urea Nitrogen, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge specimen to remove any cellular material.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Body Fluid Refrigerated (preferred) 7 days
- Frozen 365 days

**CPT Code Information:** 84520

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**Blood Worm, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Bloom Syndrome, Mutation Analysis, 2281 delATCTGAinsTAGATTC (2281del6/ins7)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any
anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2.
Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen
Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required
for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container
Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen
Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen
Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent
cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks Collection Instructions: Submit
confluent cultured cells from another laboratory. Specimen Stability Information: Ambient
(preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL; Amniotic Fluid: 10 mL; Chorionic Villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81209-BLM (Bloom syndrome, RecQ helicase-like) (eg, Bloom
syndrome) gene analysis, 2281 del6ins7 variant; Fibroblast Culture for Genetic Test; 88233-Tissue
culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic
Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate);
88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative
analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg,
pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient
germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or
maternal cell contamination of fetal cells (if appropriate);

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**MUSS 82548**

**Blue Mussel, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FBLUG 57658**

**Blueberry IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days
**CPT Code Information:** 86001

**BLUE**

**82359**

**Blueberry, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**BMPR1A Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology code; ; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome or oligo-based comparative genomic hybridization microarray analysis);

**BOB1**

**70365**

**BOB-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**Bone Alkaline Phosphatase, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top
- Acceptable: Serum gel
- Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 60 days

**CPT Code Information:** 84080

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**Bone Histomorphometry, Consultant Interpretation, Slides Only**

**Specimen Requirements:**
- Supplies: Bone Histomorphometry Fact Sheet (T579)
- Specimen Type: Bone
- Source: Anterior iliac crest
- Container/Tube: Slides

**Collection Instructions:**
A minimum of 1 Goldner Trichrome-stained slide and 1 hematoxylin and eosin-stained slide are required. Additional Information: For more information, see Bone Histomorphometry Facts (T579) in Special Instructions.

**Transport Temperature:**
Varies Ambient

**CPT Code Information:** 88321

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**Bone Histomorphometry, Gross Microscopic Exam**

**Specimen Requirements:**
- Supplies: -Metal Free Specimen Vial (T173) -Bone Histomorphometry Specimen Preparation (T579)
- Specimen Type: Bone
- Preferred: Anterior iliac crest
- Container/Tube: Metal-free container (T173)

**Collection Instructions:**
1. Fix specimen in 70% ethanol. 2. Quantitation of bone turnover requires 2 time-spaced tetracycline labels. 3. The use of metal-free containers is required to avoid aluminum or iron contamination. Additional Information: 1. Consultation with a Mayo Clinic Laboratories pathologist or endocrinologist/nephrologist is recommended for first-time users of this service. Written instructions are available upon request. 2. For more information, see Bone Histomorphometry Specimen Preparation (T579) in Special Instructions.

**Transport Temperature:**
Varies Ambient
- (preferred)
- Refrigerated

**CPT Code Information:** 88346; 88307; 88313;

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**Bone Marrow Aspirate (Bill Only)**

**Specimen Requirements:**
This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

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Bone Marrow Biopsy (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 85097 GC

Bone Marrow Clot (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88305

Bordetella pertussis and Bordetella parapertussis, Molecular Detection, PCR

Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Bordetella pertussis or Bordetella parapertussis DNA is unlikely. Submit only 1 of the following specimens: Preferred: Supplies: Transswab Nasopharyngeal With Charcoal System (T286) Nasopharyngeal Swab (Rayon Mini-Tip Swab) (T515) Specimen Type: Nasopharyngeal swab Container/Tube: Rayon swab with an aluminum shaft placed in transport medium such as Stuart's with or without charcoal, or Amies with or without charcoal (Transswab Nasopharyngeal with Charcoal System [T286]) or a green-top nasopharyngeal swab (rayon mini-tip) with Stuart's media (no charcoal) (T515). Additional Information: 1. Swab transport containers without charcoal must contain a pledget saturated with either Stuart's or Amies liquid media. Clear semi-solid/solid media is gel and will be rejected. 2. Other swab or media types may be inhibitory to PCR testing and will be rejected. Acceptable: Specimen Type: Nasopharyngeal (not throat) aspirate/wash or nasal aspirate/wash Container/Tube: Sterile container with a screw top cap (no transport media) Specimen Volume: Entire collection

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Varies Refrigerated (preferred) 7 days
Ambient 7 days
**BORDG**

**Bordetella pertussis Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 87798 x 2

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**BOAC**

**Boron, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a trace metal free royal blue-top, no additive tube(s). (Serum gel tube is not acceptable.) Spin down and send 2 mL serum in an acid washed plastic screw capped vial (MML supply number T619), ship refrigerate in a plastic vial. Note: Label specimen appropriately (serum) Plasma Draw blood in a trace metal free royal blue-top EDTA tube(s). (Plasma gel tube is not acceptable.) Spin down and send 2 mL plasma in an acid washed plastic screw capped vial (MML supply number T619), ship refrigerate in a plastic vial. Note: Label specimen appropriately (plasma)

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 86615

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**BMIYB**

**Borrelia miyamotoi Detection PCR, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798
Borrelia miyamotoi Detection PCR, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798

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Botrytis cinerea, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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Bovine Serum Albumin, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86008

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Box Elder/Maple, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**BRACH**

**BRACHYURY IMMUNOSTAIN, TECHNICAL COMPONENT ONLY**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient  
(preferred)  
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**BBRAF**

**BRAF ANALYSIS (BILL ONLY)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies

CPT Code Information: 81210-BRAF (v-raf murine sarcoma viral oncogene homolog B1) (eg, colon cancer), gene analysis, V600E variant

**BRAFC**

**BRAF MUTATION ANALYSIS (V600), MELANOMA**

**Specimen Requirements:** Pathology report must accompany specimen in order for testing to be performed. Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Container/Tube: Slides Specimen Volume: 1 stained and 5 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 5 unstained, nonbaked slides with 5-micron thick sections of the tumor tissue.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin-and-eosin and 5 unstained, nonbaked slides (5-microns thick sections) of the tumor tissue.

**Transport Temperature:**

Varies Ambient  
(preferred)  
Frozen  
Refrigerated

CPT Code Information: 81210-BRAF (v-raf murine sarcoma viral oncogene homolog B1), Melanoma FDA approved Cobas assay; Slide Review; 88381-Microdissection, manual;
**BRAF Mutation Analysis (V600E), Tumor**

**Specimen Requirements:** Preferred Specimen Type: Formalin-fixed, paraffin-embedded tissue block
Acceptable Specimen Type: Tissue Slides: 1 stained and 10 unstained

**Collection Instructions:**
Submit 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides with 5-micron thick sections of the tumor tissue.

**Transport Temperature:**
Varies

**Ambient** (preferred)

Frozen

Refrigerated

**CPT Code Information:** 81210-BRAF (v-raf murine sarcoma viral oncogene homolog B1) (eg, colon cancer), gene analysis, V600E variant; 88381-Microdissection, manual;

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**BRAF V600E Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)
Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick.
Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY
Ambient
(preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Brazil Nut, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top
Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

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**BRCA1/BRCA2 Ashkenazi Jewish 3-Site Mutation Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant.
Specimen Type: Whole blood
Container/Tube: Preferred:
Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 10 mL
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81212

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**BRCAZ 64283**

**BRCA1/BRCA2 Genes, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this assay; see Special Instructions. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Varies
- Refrigerated (preferred)
- Ambient
- Frozen

**CPT Code Information:** 81162

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**C2729 81413**

**Breast Carcinoma-Associated Antigen (CA 27.29), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection and aliquot sent. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Serum Frozen (preferred) 90 days
- Refrigerated 7 days
- Ambient 4 days

**CPT Code Information:** 86300

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Current as of January 8, 2019 2:38 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
BreastNext: Analyses of 17 Genes Associated With Hereditary Breast Cancer

**Specimen Requirements:** Container/Tube: Preferred: EDTA (purple top) Acceptable: Yellow top (citric acetate) or grey top (potassium oxalate/sodium fluoride) tube Specimen volume: 10 mL Collection instructions: Draw blood in EDTA (purple top) tube(s) and send 10 mL of whole blood refrigerate. Complete Ambry Cancer test requisition form NOTE: For transfusion patients, wait at least 2 weeks after a packed cell or platelet transfusion and at least 4 weeks after a whole blood transfusion prior to blood draw.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Ambient 72 hours

**CPT Code Information:** 81211; 81213; 81228; 81321; 81323; 81408;

BRG1 (SMARCA4) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Broad Range Bacterial PCR and Sequencing

**Specimen Requirements:** Fresh tissue is preferred over formalin-fixed, paraffin-embedded tissue. Submit only 1 of the following specimens: Specimen Type: Fresh tissue or biopsy Sources: Normally sterile tissue such as bone, lymph node, joint, heart valve, brain, viscera, organ, lung Container/Tube: Sterile container Specimen Volume: Entire collection or 5 mm(3) Collection Instructions: 1. Collect fresh tissue specimen. 2. Submit tissue only, do not add fluid to tissue 3. Freeze specimen. Specimen Stability Information: Frozen <14 days (preferred)/Refrigerated <14 days Supplies: Tissue Block Container (T553) Specimen Type: Paraffin-embedded tissue block Sources: Normally sterile or deep tissues such as bone, lymph node, joint, heart valve, brain, viscera, organ, lung Container/Tube: Sterile container for cut sections or Tissue Block Container (T553) Collection Instructions: Submit formalin-fixed, paraffin-embedded tissue block to be cut and returned. Alternately, perform cuts and place two to five 10-micron sections rolled or scrolled in a sterile container for submission. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Fluid Sources: Normally sterile body fluids such as cerebrospinal, vitreous humor, pleural, abdominal, peritoneal, ascites, pericardial, pelvic Container/Tube: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: 1. Collect fresh fluid specimen. 2. Freeze specimen. Specimen Stability Information: Frozen <14 days(preferred)/Refrigerated <14 days Specimen Type: Synovial fluid Container/Tube: Preferred: Red
clot tube (no anticoagulant) or sterile container Acceptable: Lavender top (EDTA), pink top (EDTA), royal blue top (EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred). Specimen Stability Information: Frozen <14 days (preferred)/ Refrigerated <14 days

**Specimen Minimum Volume:** Spinal Fluid, Synovial Fluid, or Vitreous Humor Fluid: 0.5 mL Tissue: 5 mm(3) or two 10-micron sections

**Transport Temperature:**
Varies

**CPT Code Information:** 87801-Broad Range Bacterial PCR and Sequencing; 87153-Bacterial Ident by Sequencing (if appropriate); 87798-Identification by PCR (if appropriate); ;

**FBRCG 57642**

**Broccoli IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

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<th>Days</th>
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**CPT Code Information:** 86001

**BROC 82817**

**Broccoli, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

<table>
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**CPT Code Information:** 86003

**BROM 82919**

**Brome Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**BRUGM 89476**  
**Brucella Antibody Screen, IgG and IgM, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1.1 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
Frozen 14 days

CPT Code Information: 86622 x 2-Brucella antibody, IgG and IgM; 86622-Brucella total antibody, agglutination (if appropriate);

**BRUC 8077**  
**Brucella Culture**  
**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Bone marrow Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Stability Information: Ambient <24 hours Alternate: Specimen Type: Abscess, respiratory specimen, spinal fluid, sterile body fluid, or tissue Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Stability Information: Refrigerated <24 hours

**Transport Temperature:**  
Varies

CPT Code Information: 87081-Brucella culture; 87077-Identification by MALDI-TOF mass spec (if appropriate); 87153-Aerobic identification by sequencing (if appropriate); 87176-Tissue processing (if appropriate);

**BRUCB 87345**  
**Brucella Culture, Blood**  
**Specimen Requirements:** Container/Tube: Blood Isolator tube Specimen Volume: Entire collection

**Transport Temperature:**  
Whole Blood Culture Ambient 24 hours

CPT Code Information: 87081-Brucella Culture, Blood; 87153-Aerobic Ident by Sequencing (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate);

**BRUTA 8112**  
**Brucella Total Antibody Confirmation, Agglutination, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86622

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**BRGGP 63163**

**Brugada Syndrome Multi-Gene Panel, Blood**

**Specimen Requirements:**
Container/Tube: Lavender top (EDTA)  
Specimen Volume: 3 mL  
Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred)  
Refrigerated

**CPT Code Information:** 81479; 81406; 81404; 81407;

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**BSPR 82480**

**Brussel Sprouts, IgE**

**Specimen Requirements:**
Container/Tube: Preferred: Red top  
Acceptable: Serum gel  
Specimen Volume: 0.5 mL for each 5 allergens requested  
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days  
Frozen 90 days

**CPT Code Information:** 86003

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**BTKFP 89742**

**Bruton Tyrosine Kinase (BTK) Genotype and Protein Analysis, Full Gene Sequence and Flow Cytometry**

**Specimen Requirements:**
Two separate EDTA specimens and the patient information sheet are required.  
Specimen Type: Blood for BTKSP / Bruton Tyrosine Kinase (BTK) Genotype, Full Gene Sequence  
Container/Tube: Lavender top (EDTA)  
Specimen Volume: 3 mL  
Collection Instructions: 1. Send specimen in original tube. 2. Label as BTKSP.  
Specimen Stability Information: Refrigerated (preferred)/Ambient  
3. Label as BTK.  
Specimen Type: Blood for BTK / Bruton Tyrosine Kinase (Btk), Protein Expression, Flow Cytometry, Blood Container/Tube: Lavender top (EDTA)  
Specimen Volume: 4 mL  
Collection Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Ship at ambient temperature only. 3. Label as BTK.  
Specimen Stability Information: Ambient 72 hours  
Additional Information: For flow cytometry serial monitoring, we recommend that specimen draws be performed at
the same time of day.

**Specimen Minimum Volume:** BTKSP: 0.35 mL BTK: 2 mL

**Transport Temperature:**
Whole Blood EDTA  Varies 72 hours

**CPT Code Information:**
81406-Bruton Tyrosine Kinase (BTK) Genotype, Full Gene Sequence; 88184-Bruton Tyrosine Kinase (Btk), Protein Expression, Flow Cytometry, Blood;

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**BTKMP 89740**

Bruton Tyrosine Kinase (BTK) Genotype and Protein Analysis, Known Mutation Sequencing and Flow Cytometry

**Specimen Requirements:** Two separate EDTA specimens and the patient information sheet are required. Specimen Type: Blood for BTKKM / Bruton Tyrosine Kinase (BTK) Genotype, Known Mutation Sequence Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Send specimen in original tube. 2. Label as BTKKM. Specimen Stability Information: Refrigerated (preferred) 14 days/Ambient 4 days Specimen Type: Blood for BTK / Bruton Tyrosine Kinase (Btk), Protein Expression, Flow Cytometry, Blood Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Ship at ambient temperature only. 3. Label as BTK. Specimen Stability Information: Ambient 72 hours Additional Information: For flow cytometry serial monitoring, we recommend that specimen draws be performed at the same time of day.

**Specimen Minimum Volume:** BTKKM: 0.35 mL BTK: 2 mL

**Transport Temperature:**
Whole Blood EDTA  Varies 72 hours

**CPT Code Information:** Bruton Tyrosine Kinase (BTK) Genotype, Known Mutation Sequence; 81403-Known familial variant; ; Bruton Tyrosine Kinase (Btk), Protein Expression, Flow Cytometry, Blood; 88184;

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**BTKS 89307**

Bruton Tyrosine Kinase (BTK) Genotype, Full Gene Sequence, Blood

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Whole Blood EDTA  Refrigerated (preferred)  Ambient

**CPT Code Information:** 81406

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**BTKK 89306**

Bruton Tyrosine Kinase (BTK) Genotype, Known Mutation,
**Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL
Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred)
Ambient

**CPT Code Information:** 81403

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**BTK**

**Bruton Tyrosine Kinase (Btk), Protein Expression, Flow Cytometry, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL
Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 72 hours

**CPT Code Information:** 88184

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**BUCW**

**Buckwheat, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**BDRP**

**Budgerigar Droppings, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

BFTH 82779
Budgerigar Feathers, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

BP 88874
Bullous Pemphigoid, BP180 and BP230, IgG Antibodies, Serum
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 14 days

CPT Code Information: 83516 x 2

FMARC 75307
Bupivacaine (Marcaine)
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Red Frozen (preferred) 180 days
Ambient 72 hours
Refrigerated 72 hours

CPT Code Information: 80375
Buprenorphine and Norbuprenorphine, Chain of Custody, Urine

Specimen Requirements: Supplies: Chain of Custody Kit (T282) Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the provided container, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 20 mL will compromise our ability to perform all necessary testing.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

CPT Code Information: 80348; G0480 (if appropriate);

Buprenorphine and Norbuprenorphine, Random, Urine

Specimen Requirements: Supplies: -Aliquot Tube, 5 mL (T465) -Urine Container, 60 mL (T313) Collection Container/Tube: Plastic urine container Submission Container/Tube: Aliquot tube, 5 mL (T465) Specimen Volume: 5 mL Collection Instructions: 1. No preservative. 2. If submitting for multiple tests on 1 order, submit 5 mL per test ordered in a single plastic urine container (T313).

Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

CPT Code Information: 80348; G0480 (if appropriate);

Buprenorphine Screen with Reflex, Urine

Specimen Requirements: Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Plastic urine container Submission Container/Tube: Aliquot Tube, 5 mL (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 5 mL in 1 plastic bottle. 3. No preservative. 4. If submitting for multiple urine drug confirmation tests on 1 order, submit 5 mL per test ordered in a single plastic, 60 mL urine container (T313). Additional Information: If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine.

Specimen Minimum Volume: 2.5 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 14 days
Ambient 72 hours
BUPS
63119

Buprenorphine Screen, Urine

**Specimen Requirements:**
- **Supplies:** Aliquot Tube, 5 mL (T465)
- **Collection Container/Tube:** Plastic urine container
- **Submission Container/Tube:** Aliquot Tube, 5 mL (T465)
- **Specimen Volume:** 5 mL

**Collection Instructions:**
1. Collect a random urine specimen.
2. Submit 5 mL in 1 plastic bottle.
3. No preservative.
4. If submitting for multiple urine drug confirmation tests on 1 order, submit 5 mL per test ordered in a single plastic, 60 mL urine container (T313).

**Additional Information:** If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

FBUMT
75387

Bupropion and Metabolite, Serum

**Specimen Requirements:**
- **Specimen Type:** Serum
- **Container/Tube:** Red-top
- **Preferred:** Red-top
- **Specimen volume:** 1 mL
- Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Frozen 30 days

FBUS
91115

Buspirone (Buspar)

**Specimen Requirements:**
- Submit only 1 of the following specimens:
  - Plasma
    - Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial.
  - Serum
    - Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

CPT Code Information: 80307

CPT Code Information: 80307

CPT Code Information: 80307

CPT Code Information: 80307
**Busulfan, Intravenous Dose, Area Under the Curve (AUC), Plasma**

**Specimen Requirements:** Four plasma specimens with different draw times (keep all specimens under 1 order) are required. Collection Container/Tube: Green top (sodium heparin) Submission Container/Tube: Plastic vials Specimen Volume: 1 mL Collection Instructions: 1. The first specimen should be collected immediately after completion of the first intravenous infusion of 0.8 mg/kg busulfan. 2. Additional specimens should also be collected at 1 hour, 2 hours, and 4 hours after completion of infusion. 3. Label each specimen with exact time of collection. 4. Busulfan degrades quickly at room temperature. Specimens must be kept in wet ice slurry or refrigerated at 4°C. Specimens must be centrifuged within 2 hours after collection. Separate the plasma and transfer to individual 5-mL plastic vials, labeled with exact time of draw. Immediately freeze at -20°C.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Plasma Na Heparin Frozen (preferred) 28 days
- Refrigerated 72 hours

**CPT Code Information:** 80299 x 4

**Butalbital, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1.5 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80345; G0480 (if appropriate);

**C-Peptide, Serum**

**Specimen Requirements:** Patient Preparation: 1. Patient should fast for 8 hours. 2. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Current as of January 8, 2019 2:38 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 175
C-Reactive Protein (CRP) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 84681

C-Reactive Protein (CRP), Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tube should be centrifuged within 2 hours of collection. 2. Red-top tube should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days
Ambient 72 hours

**CPT Code Information:** 86140

C-Reactive Protein, High Sensitivity, Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 30 days

**CPT Code Information:** 86141
### C1 Esterase (C1ES) Inhibitor Antigen, Serum

**Specimen Requirements:**
- **Collection Container/Tube:** Preferred: Red top Acceptable: Serum gel
- **Submission Container/Tube:** Plastic vial
- **Specimen Volume:** 1 mL

**Collection Instructions:**
- Fasting preferred but not required.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 14 days
- Ambient 72 hours
- Refrigerated 72 hours

**CPT Code Information:** 83883

### C1 Esterase Inhibitor, Functional Assay, Serum

**Specimen Requirements:**
- **Patient Preparation:** Patient should be fasting.
- **Collection Container/Tube:** Red top
- **Submission Container/Tube:** Plastic vial
- **Specimen Volume:** 1 mL

**Collection Instructions:**
1. Immediately after drawing the specimen, place the tube on wet ice.
2. Spin down and separate serum from clot.
3. Freeze specimen within 30 minutes.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Red Frozen 6 days

**CPT Code Information:** 83520

### C1Q Binding Assay

**Specimen Requirements:**
- Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.)
- Separate from cells within 2 hours of collection.
- Send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Frozen 14 days

**CPT Code Information:** 86332

### C1q Complement, Functional, Serum

**Specimen Requirements:**
- **Patient Preparation:** Fasting preferred
- **Supplies:** Aliquot Tube, 5 mL (T465)
- **Collection Container/Tube:** Red top
- **Submission Container/Tube:** Plastic, 5 mL tube
- **Specimen Volume:** 1 mL

**Collection Instructions:**
1. Immediately after specimen collection, place the tube on wet ice.
2. Centrifuge and separate serum from clot.
3. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Frozen 14 days
C2AG
84141

C2 Complement, Antigen, Serum

**Specimen Requirements**: Only orderable as a reflex. For more information see C2 / C2 Complement, Functional, with Reflex, Serum. Patient Preparation: Fasting preferred but not required. Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Red top Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen.

**Specimen Minimum Volume**: 0.5 mL

**Transport Temperature**:
- Serum Red Frozen (preferred) 60 days
  - Ambient 7 days
  - Refrigerated 7 days

CPT Code Information: 86161

C2FXN
32137

C2 Complement, Functional, Serum

**Specimen Requirements**: Patient Preparation: Fasting preferred but not required. Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Red top Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen.

**Specimen Minimum Volume**: 0.5 mL

**Transport Temperature**:
- Serum Red Frozen 21 days

CPT Code Information: 86160

C2
81835

C2 Complement, Functional, with Reflex, Serum

**Specimen Requirements**: Patient Preparation: Fasting preferred but not required. Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Red top Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen.

**Specimen Minimum Volume**: 0.5 mL

**Transport Temperature**:
- Serum Red Frozen 21 days

CPT Code Information: 86161; 86160 x3 (if appropriate);

C3FX
81090

C3 Complement, Functional, Serum
Specimen Requirements: Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Serum Red Frozen 14 days

CPT Code Information: 86161

C3a Level

Specimen Requirements: Draw blood in a lavender-top (EDTA) tube(s), plasma gel tube(s) is not acceptable. Mix well, centrifuge at ambient temperature within one half hour of draw, and freeze immediately. Send 1 mL of EDTA plasma frozen in plastic vial. Complete and submit with specimen: 1. National Jewish Complement request form

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Plasma EDTA Frozen 365 days

CPT Code Information: 86160

C4 Acylcarnitine, Quantitative, Urine

Specimen Requirements: Patient Preparation: If clinically feasible, discontinue L-carnitine supplementation at least 72 hours before specimen collection. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10 mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Freeze specimen immediately.

Specimen Minimum Volume: 1 mL

Transport Temperature: Urine Frozen (preferred) 7 days Refrigerated 24 hours

CPT Code Information: 82017

C4 Complement, Functional, Serum

Specimen Requirements: Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Serum Red Frozen 14 days
**CPT Code Information:** 86161

### C4ades Arg Level

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s), plasma gel tube(s) is not acceptable. Mix well, centrifuge at ambient temperature within one half hour of draw (preferably immediately after venipuncture), and freeze immediately on dry ice or at -70 C. Send 1 mL of EDTA plasma frozen in plastic vial. Complete and submit with specimen: 1. National Jewish Complement request form

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma EDTA Frozen 365 days

**CPT Code Information:** 86160

### C5 Complement, Antigen, Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Fasting 2. Spin down and separate serum from clot.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Frozen (preferred) 60 days

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient</td>
<td>7 days</td>
</tr>
<tr>
<td>Refrigerated</td>
<td>7 days</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 86160

### C5 Complement, Functional, Serum

**Specimen Requirements:** Patient Preparation: Fasting preferred Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Red Frozen 14 days

**CPT Code Information:** 86161

### C5-DC Acylcarnitine, Quantitative, Urine

**Specimen Requirements:** Patient Preparation: If clinically feasible, discontinue L-carnitine supplementation at least 72 hours before specimen collection. Supplies: Urine Tubes, 10 mL (T068)
Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Freeze specimen immediately.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine: Frozen (preferred) 7 days
- Refrigerated: 24 hours

**CPT Code Information:** 82017

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**C5OHU**

**88830**

**C5-OH Acylcarnitine, Quantitative, Urine**

**Specimen Requirements:**
- Patient Preparation: If clinically feasible, discontinue L-carnitine supplementation at least 72 hours before specimen collection.
- Supplies: Urine Tubes, 10 mL (T068)

Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Freeze specimen immediately.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine: Frozen (preferred) 7 days
- Refrigerated: 24 hours

**CPT Code Information:** 82017

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**C6FX**

**83393**

**C6 Complement, Functional, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Red Frozen 14 days

**CPT Code Information:** 86161

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**C7FX**

**81064**

**C7 Complement, Functional, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Red Frozen 14 days
C8FX 81065

**C8 Complement, Functional, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Red Frozen 14 days

CPT Code Information: 86161

C9FX 81066

**C9 Complement, Functional, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen. Additional Information: Fasting preferred.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Red Frozen 14 days

CPT Code Information: 86161

C9ORF 35377

**C9orf72 Hexanucleotide Repeat, Molecular Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Ambient (preferred) Frozen Refrigerated

CPT Code Information: 81479;

FCABB 57672

**Cabbage IgG**

Current as of January 8, 2019 2:38 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

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**CABB 86327**

**Cabbage, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

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**COCOA 60112**

**Cacao/Cocoa, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

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**CDOMB 89539**

**Cadmium for Occupational Monitoring, Blood**

**Specimen Requirements:** Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368381.
**Cadmium Occupational Exposure, Random, Urine**

**CPT Code Information:** 82300

**Specimen Requirements:** Only orderable as part of profile. See CDUO / Cadmium Occupational Exposure, Random, Urine or HMSOR / Heavy Metals Occupational Exposure with Reflex, Urine.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**Cadmium Occupational Exposure, Random, Urine**

**CPT Code Information:** 82300

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect urine a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 28 days
  - Ambient: 28 days
  - Frozen: 28 days

**Cadmium, 24 Hour, Urine**

**CPT Code Information:** 82300 ; 82570 ; 8678

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis
Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82300

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**Cadmium, Blood**

**Specimen Requirements:** Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82300

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**Cadmium/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect urine a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82300 ; 82570 ;
**CDRC**

**Cadmium/Creatinine Ratio, Urine**

**Specimen Requirements:** Only orderable as part of profile. See CDRCR / Cadmium/Creatinine Ratio, Random, Urine or HMCRU / Heavy Metal/Creatinine Ratio, with Reflex, Urine.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80155

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**CAFN**

**Caffeine, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 72 hours
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80155

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**CALCI**

**Calcitonin (CALCI) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**CATLN**

**Calcitonin, Fine-Needle Aspiration Biopsy (FNAB)-Needle Wash, Lymph Node**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 1 to 1.5mL Collection Instructions: 1. Needle wash specimens for analysis should be
collected in conjunction with cytology specimens. 2. Have saline available prior to start of procedure. Saline is the only acceptable solution for needle washings. 3. After each fine-needle aspiration biopsy (FNAB) has been collected and the material in the needle has been expelled onto a slide for cytologic analysis, attach the used FNAB needle to an empty syringe. 4. Withdraw between 0.10 mL and 0.25 mL of saline up through the needle until the saline starts to fill the hub of the needle or end of the syringe. 5. Expel this fluid back through the needle into a separate tube. This is the needle washing used for analysis. 6. Repeat steps 2 through 4 for each needle pass of the same biopsied site and empty into the same tube, accumulating a total of 0.5 mL to 1.5 mL of fluid to send to the laboratory. (If more than 1 site is biopsied, see Additional Information) 7. Inspect specimen for visible blood or tissue contamination: -a. If bloody, centrifuge specimen and transfer supernatant to a new plastic aliquot tube (5-mL standard tube) to send to laboratory. The supernatant, not the cellular material, is used for analysis. -b. If specimen is clear, centrifugation is not necessary. 8. Refrigerate within 1 to 2 hours of collection and freeze within 2 to 4 hours of collection. Additional Information: 1. If more than 1 site is biopsied, each washing material should be submitted on a separate tube and under a different order number. 2. A minimum of 0.5 mL is required for testing; however, the total collection volume should not exceed 1.5 mL. Sample volumes outside these parameters may be rejected. 3. Do not send saline control. This test has been validated to rule-out saline matrix effect.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Fine Needle Wash  Frozen (preferred)  7 days
  - Refrigerated  4 hours

**CPT Code Information:** 82308

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**CATN 9160 Calcitonin, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.8 mL Collection Instructions: 1. After draw immediately place specimen on ice. 2. Refrigerate specimen during centrifugation and immediately transfer serum to a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

- Serum Frozen (preferred)  90 days
  - Refrigerated  24 hours
  - Ambient  4 hours

**CPT Code Information:** 82308

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**CALU 36891 Calcium, 24 Hour, Urine**

**Specimen Requirements:** Collection Container/Tube: 24-hour graduated urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL
**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 82340

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**Calcium, Ionized, Serum**

**Specimen Requirements:**
- Container/Tube: Serum gel or serum gel microtainer
- Specimen Volume: Full tube
- Collection Instructions:
  1. Allow blood to clot for 30 minutes.
  2. Serum gel tube/microtainer must be centrifuged within 1 hour of draw time. Centrifuge with stopper in place for 7 minutes at 3,000 rpm to ensure that the gel barrier separates the serum and cells.

**Specimen Minimum Volume:** 1.75 mL in a 3.5 mL (50% full) in serum gel tube or 1 full serum gel microtainer

**Transport Temperature:**
- Serum SST Refrigerated 7 days

**CPT Code Information:** 82330

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**Calcium, Random, Urine**

**Specimen Requirements:**
- Container/Tube: Plastic urine container
- Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert
- Specimen Volume: 4 mL
- Collection Instructions:
  1. Collect a random urine specimen.
  2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 82310

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**Calcium, Random, Urine**

**Specimen Requirements:**
- Only orderable as part of a profile. For more information see SSATR Supersaturation Profile, Pediatric, Random, Urine.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
CPT Code Information: 82310

**Calcium, Total, Serum**

**Specimen Requirements:**
- **Collection Container/Tube:** Preferred: Serum gel
- **Acceptable:** Red top
- **Submission Container/Tube:** Plastic vial
- **Specimen Volume:** 0.5 mL
- **Collection Instructions:**
  1. If drawing for more than calcium, total, send first tube drawn.
  2. Serum gel tubes should be centrifuged within 2 hours of collection.
  3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Frozen (preferred) 240 days
- Refrigerated 21 days

CPT Code Information: 82310

**Caldesmon Immunostain, Technical Component Only**

**Specimen Requirements:**
- **Supplies:** Immunostain Technical Only Envelope (T693)
- **Specimen Type:** Tissue
- **Container/Tube:** Immunostain Technical Only Envelope (T693)
- **Preferred:** 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick.
- **Acceptable:** Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**California Virus (La Crosse) Encephalitis Antibody Panel, IgG and IgM, Spinal Fluid**

**Specimen Requirements:**
- **Container/Tube:** Sterile vial
- **Specimen Volume:** 0.5 mL
- **Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86651 x 2

**California Virus (La Crosse) IgG and IgM, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel
- **Acceptable:** Red top
- **Specimen Volume:** 0.5 mL
Specimen Minimum Volume: 0.15 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86651 x 2

Cammodulin-Binding Transcription Activator 1 (CAMTA1), Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Calponin Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Calprotectin, Feces

Specimen Requirements: Supplies: Stool container, Small (Random), 4 oz Random (T288) Submission Container/Tube: Stool container (T288) Specimen Volume: 5 g Collection Instructions: 1. Collect a fresh random fecal specimen, no preservatives. 2. Specimens may be stored refrigerate for up to 72 hours following collection. Additional Information: 1. Separate specimens must be submitted when multiple tests are ordered. Specimen must be split prior to freezing for transport. 2. Testing cannot be added on to a previously collected specimen.

Specimen Minimum Volume: 1 gm

Transport Temperature:
Fecal Frozen 7 days
**CALR Mutation Analysis, Myeloproliferative Neoplasm (MPN)**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood Container/Tube: EDTA (lavender top) or ACD-B (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) or ACD-B (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and include indication of volume and concentration of the DNA. Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:** Varies Varies 7 days

**CPT Code Information:** 81219-CALR (calreticulin) (eg, myeloproliferative disorders), gene analysis, common variants in exon 9

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**CALX Mutation Analysis, Myeloproliferative Neoplasm (MPN), Reflex**

**Specimen Requirements:** Only orderable as a reflex. For more information see MPNR / Myeloproliferative Neoplasm (MPN), JAK2 V617F with reflex to CALR and MPL.

**Specimen Minimum Volume:** Blood and Bone marrow: 0.05 mL

**Transport Temperature:** Varies Varies 7 days

**CPT Code Information:** 81219-CALR (calreticulin) (eg, myeloproliferative disorders), gene analysis, common variants in exon 9

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**Calreticulin ex9mut Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:** TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**Calretinin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Canary Feathers, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Canary Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Canavan Disease, Mutation Analysis, AS PA**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Yellow top (ACD) or lavender top (EDTA) Acceptable: Any
anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL; Amniotic Fluid: 10 mL; Chorionic Villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81200-ASPA aspartoacylase (eg, Cnava disease) gene analysis, common variants (eg, E285A, Y231X); 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**CA25**

**Cancer Antigen 125 (CA 125), Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 5 days

Frozen 180 days

**CPT Code Information:** 86304

**CA153**

**Cancer Antigen 15-3 (CA 15-3), Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.45 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 7 days

Frozen 90 days
CPT Code Information: 86300

**CancerNext**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (purple top) Acceptable: Yellow top (citric acetate) or grey top (potassium oxalate/sodium fluoride) tube Specimen volume: 10 mL Collection instructions: Draw blood in EDTA (purple top) tube(s) and send 10 mL of whole blood refrigerate. Complete Ambry Cancer test requisition form. NOTE: For transfusion patients, wait at least 2 weeks after a packed cell or platelet transfusion and at least 4 weeks after a whole blood transfusion prior to blood draw.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**

- Whole Blood EDTA Refrigerated (preferred) 7 days
- Ambient 72 hours

CPT Code Information: 81201; 81211; 81213; 81292; 81294; 81295; 81297; 81298; 81300; 81317; 81319; 81321;

**CDAB**

**Candida albicans (Monilia), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**FMARI**

**Cannabinoid Analysis, Whole Blood**

**Specimen Requirements:** Draw blood in a purple-top (EDTA), green-top (sodium-heparin) or grey-top (NaF/oxalate) tube(s). Send 7 mL of whole blood refrigerated in a plastic vial.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Whole blood Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

CPT Code Information: 80307; 80349- if applicable;
Caraway, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Carbamazepine Hypersensitivity Pharmacogenomics, Blood

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred)
- Refrigerated

**CPT Code Information:** 81381 x 2

Carbamazepine Hypersensitivity Pharmacogenomics, Saliva

**Specimen Requirements:** Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Supplies: DNA Saliva Collection Kit (T651) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:** Saliva Ambient

**CPT Code Information:** 81381 x 2

Carbamazepine Profile, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: 1. Draw blood 12 hours (trough value) after last dose. 2. Tubes should be centrifuged and aliquoted within 2 hours of collection.
Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 7 days
    Frozen 28 days
    Ambient 48 hours

CPT Code Information: 80156-Carbamazepine, total; 80157-Carbamazepine, free; 80299-Carbamazepine-10,11-Epoxide;

**CARFT**
37039

Carbamazepine, Free and Total, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 7 days
    Frozen 28 days
    Ambient 48 hours

CPT Code Information: 80156-Carbamazepine, Total, S; 80157-Carbamazepine, Free, S;

**CARF**
37038

Carbamazepine, Free, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 7 days
    Frozen 28 days
    Ambient 48 hours

CPT Code Information: 80157

**CARATA**
37035

Carbamazepine, Total, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: Tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 7 days
    Frozen 28 days
    Ambient 48 hours
**CPT Code Information:** 80156

**CARBG** 37036

**Carbamazepine-10,11-Epoxide, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Draw blood 12 hours (trough value) after last dose.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 28 days
- Ambient 48 hours

**CPT Code Information:** 80156-Carbamazepine, Tot, S; 80299-Carbamazepine-10,11-Epoxide;

**CARNP** 62606

**Carbapenemase Detection-Carba NP Test**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Slant Specimen Volume: Isolate Collection Instructions: Submit Enterobacteriaceae or Pseudomonas aeruginosa isolate in pure culture (ie, not mixed with other organisms), actively growing.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87185

**CARB** 35953

**Carbapenemase Detection-Carba NP Test (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87185

**199PC** 89508

**Carbohydrate Antigen 19-9 (CA 19-9), Pancreatic Cyst Fluid**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 1 mL
Specimen Minimum Volume: 0.5 mL (Samples <0.5 mL may be rejected)

Transport Temperature:
Pancreatic Cyst Fluid Frozen (preferred) 30 days
Refrigerated 7 days

CPT Code Information: 86301

Carbohydrate Antigen 19-9 (CA 19-9), Peritoneal Fluid

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 2 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Peritoneal Frozen (preferred) 90 days
Ambient 7 days
Refrigerated 7 days

CPT Code Information: 86301

Carbohydrate Antigen 19-9 (CA 19-9), Pleural Fluid

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 2 mL

Specimen Minimum Volume: 0.5 mL (Samples <0.5 mL may be rejected)

Transport Temperature:
Pleural Fluid Frozen (preferred) 90 days
Refrigerated 14 days
Ambient 7 days

CPT Code Information: 86301

Carbohydrate Antigen 19-9 (CA 19-9), Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred)  7 days

Frozen  90 days

CPT Code Information: 86301

**CDG**  
89891  
**Carbohydrate Deficient Transferrin for Congenital Disorders of Glycosylation, Serum**  
**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
Submission Container/Tube: Plastic vial Specimen Volume: 0.1 mL  
**Specimen Minimum Volume:** 0.05 mL  
**Transport Temperature:**  
Serum Frozen (preferred)  45 days  
Refrigerated  28 days  
Ambient  7 days

CPT Code Information: 82373

**CDTA**  
82425  
**Carbohydrate Deficient Transferrin, Adult, Serum**  
**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
Submission Container/Tube: Plastic vial Specimen Volume: 0.1 mL  
**Specimen Minimum Volume:** 0.05 mL  
**Transport Temperature:**  
Serum Frozen (preferred)  45 days  
Refrigerated  28 days  
Ambient  7 days

CPT Code Information: 82373

**CHOU**  
9255  
**Carbohydrate, Urine**  
**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: Collect an early-morning (preferred) random urine specimen.  
**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Urine Frozen (preferred)  21 days  
Refrigerated  21 days

CPT Code Information: 84377-Carbohydrate; 82760-Galactose (if appropriate); 82945-Glucose (if appropriate);
Carbon Monoxide, Blood

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL
Collection Instructions: Avoid exposure of specimen to atmosphere.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred) 14 days
- Frozen 14 days
- Refrigerated 14 days

**CPT Code Information:** 82375

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Carboxy-Tetrahydrocannabinol (THC) Confirmation, Chain of Custody, Urine

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80349; G0480 (if appropriate);

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Carboxy-Tetrahydrocannabinol (THC) Confirmation, Urine

**Specimen Requirements:** Collection Container Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order THCX / Carboxy-THC Confirmation, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours
Carcinoembryonic Antigen (CEA), Pancreatic Cyst Fluid
Specimen Requirements: Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 1 mL
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
- Pancreatic Cyst Fluid: Frozen (preferred) 90 days
- Refrigerated: 72 hours

CPT Code Information: 82378

Carcinoembryonic Antigen (CEA), Peritoneal Fluid
Specimen Requirements: Container/Tube: Plain, plastic, screw top tube Specimen Volume: 2 mL
Specimen Minimum Volume: 0.5 mL (Samples <0.5 mL may be rejected)
Transport Temperature:
- Peritoneal Fluid: Frozen (preferred) 90 days
- Ambient: 7 days
- Refrigerated: 7 days

CPT Code Information: 82378

Carcinoembryonic Antigen (CEA), Pleural Fluid
Specimen Requirements: Container/Tube: Plain, plastic, screw-top tube Specimen Volume: 2 mL
Specimen Minimum Volume: 0.5 mL (Specimens <0.5 mL may be rejected)
Transport Temperature:
- Pleural Fluid: Frozen (preferred) 90 days
- Refrigerated: 14 days
- Ambient: 7 days

CPT Code Information: 82378

Carcinoembryonic Antigen (CEA), Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 90 days

CPT Code Information: 82378

CEASF 90695

Carcinoembryonic Antigen (CEA), Spinal Fluid

Specimen Requirements: Collection Container/Tube: Sterile vial Submission Container/Tube: 13 x 75-mm tube Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
CSF Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 82378

MCEA 70506

Carcinoembryonic Antigen, monoclonal (mCEA) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

PCEAI 70535

Carcinoembryonic Antigen, polyclonal (pCEA) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated
**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Cardamom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**Cardiac Fibrinogen, Plasma**

**Specimen Requirements:** Patient Preparation: Fasting (12 hours preferred but not required) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and separate plasma from cells within 4 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma EDTA Refrigerated (preferred) 7 days

Frozen 30 days

Ambient 72 hours

**CPT Code Information:** 85385

**Cardiovascular Risk Marker Panel, Serum**

**Specimen Requirements:** Patient Preparation: 1. Patients must be fasting for at least 12 to 14 hours. 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Container/Tube: Serum gel Specimen Volume: 2.5 mL

**Specimen Minimum Volume:** 1.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days

Frozen 30 days

**CPT Code Information:** 80061-Lipid panel (includes: HDL [CPT Code 83718], total cholesterol [CPT Code 82465], and triglycerides [CPT Code 84478]); 83695-Lipoprotein (a); 86141-C-reactive protein; high sensitivity (hsCRP);

**Carmine Dye/Red Dye Cochineal (Dactylopius coccus) IgE**
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

Carnitine Palmitoyltransferase II Deficiency, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Acceptable: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin, T115). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

Transport Temperature:
Blood: Varies
Blood Spots: Varies

CPT Code Information: 81404-CPT2 (carnitine palmitoyltransferase 2) (eg, carnitine palmitoyltransferase II deficiency), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

Carnitine, Plasma

Specimen Requirements: Collection Container/Tube: Preferred: Green top (sodium heparin)
Acceptable: EDTA, lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 60 days
- Refrigerated 21 days
- Ambient 7 days

**CPT Code Information:** 82379

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**CARNS 60449**

**Carnitine, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Frozen (preferred) 60 days
- Refrigerated 21 days
- Ambient 7 days

**CPT Code Information:** 82379

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**CARNU 81123**

**Carnitine, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 1.5 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Frozen (preferred) 365 days
- Refrigerated 72 hours

**CPT Code Information:** 82379

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**CACTZ 35379**

**Carnitine-Acylcarnitine Translocase Deficiency, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with
any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Additional Information: Ambient 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

Transport Temperature: Varies

CPT Code Information: 81405 SLC25A20 (solute carrier family 25 [carnitine/acylcarnitine translocase], member 20) (eg, carnitine-acylcarnitine translocase deficiency), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

**CAROB**

**82368**

**Carob, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature: Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003

**FCARO**

**75178**

**Carotene, Beta**

**Specimen Requirements:** Supplies: Amber vial (T192) Specimen Type: Serum Container/Tube: Red Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Spin Down and send 1 mL of serum ambient in an amber vial (T192) to protect from light. Note: 1. Protect from light within 1 hour of collection. 2. Patient must be fasting overnight (12 hours). 3. Abstain from alcohol for 24 hours prior to collection.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Serum Ambient (preferred) 14 days

Frozen 14 days

Refrigerated 14 days

CPT Code Information: 86003
CPT Code Information: 82380

FCRTG 57630

Carrot IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days

Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

CROT 82742

Carrot, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003

FCASG 57555

Casein IgG

Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days

Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

CASE 82895

Casein, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86008

**FCASH 57687**

**Cashew IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**CASH 82881**

**Cashew, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FCASO 91995**

**Caspofungin (Cancidas)**

**Specimen Requirements:** Container/Tube: Agar slant or other appropriate media Specimen Volume: Organism in pure culture Complete and submit with specimen: 1. Fungus Testing Lab request form Collection Instructions: 1. Organism must be in pure culture, actively growing 2. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance.

**Transport Temperature:**
Varies Ambient
**CPT Code Information:** 84999 - Unlisted Chemistry Procedure (Refer to patient report to apply the appropriate CPT code in place of this unlisted CPT code based on specimen source.); 87188 - mould - MIC microdilution or agar dilution (if appropriate); 87186 - yeast - MIC microdilution or agar dilution (if appropriate);

**CASRZ**

37439

**CASR Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL

**Collection Instructions:**
1. Invert several times to mix blood.
2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies Ambient (preferred)

Frozen

Refrigerated

**CPT Code Information:** 81405-CASR (calcium-sensing receptor) (eg, hypocalcemia), full gene sequence

**CBN**

82770

**Castor Bean, IgE**

**Specimen Requirements:**

Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:**

For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**CAT**

82665

**Cat Epithelium, IgE**

**Specimen Requirements:**

Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:**

For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days
**CPT Code Information:** 86003

**COMTV**

97396

**Catechol-O-Methyltransferase (COMT) Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit (T786: fees apply) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Varies Varies

**CPT Code Information:** 0032U

**CATU**

9276

**Catecholamine Fractionation, Free, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: Discontinue drugs that release or hinder metabolism of epinephrine, norepinephrine, or dopamine for at least 1 week before obtaining the specimen (see Cautions for details). If this is not possible for medical reasons, contact the laboratory to discuss whether a shorter drug-withdrawal period may be acceptable. Supplies: Plastic, 10-mL urine tube (T068) Specimen Volume: 2 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. Use 15 mL of 50% acetic acid for children less than 5 years old. This preservative is intended to achieve a pH of between approximately 2 and 4. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 7 days

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<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
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<tbody>
<tr>
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<tr>
<td>Ambient</td>
<td>7 days</td>
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</table>

**CPT Code Information:** 82384

**CATP**

8532

**Catecholamine Fractionation, Free, Plasma**

**Specimen Requirements:** Patient Preparation: Discontinue drugs that release epinephrine, norepinephrine, or dopamine, or hinder their metabolism for at least 1 week before obtaining the specimen (see Cautions for details). If this is not possible for medical reasons, contact the laboratory and discuss whether a shorter drug withdrawal period may be possible in a particular case. The patient must refrain from eating, using tobacco, and drinking caffeinated beverages for at least 4 hours before the specimen is
drawn. Supplies: Catecholamine tubes containing EDTA-sodium metabisulfite solution (T066) (tubes have a 6-month expiration time) Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Drawing from a catheter is required. 2. Calm the patient by giving complete instructions and reassurance regarding the procedure. 3. Insert an indwelling intravenous catheter. Flush with 3 mL of NaCl using positive pressure. 4. Have the patient rest for 30 minutes in the supine position in a quiet room. 5. At the end of the 30 minutes, withdraw and discard a minimum of 3 mL of blood to remove the saline out of the catheter. 6. If provocative sampling (eg, standing specimen) is required, perform provocative maneuver immediately after obtaining supine specimen. Obtain standing specimen immediately. 7. For each specimen, draw 10 mL of blood into the chilled EDTA-sodium metabisulfite 10-mL tube. 8. Specimens must remain at refrigerated temperature during processing and transport. 9. Separate plasma in a refrigerated centrifuge within 30 minutes of draw. 10. Freeze specimen immediately.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma EDTA Meta Frozen 7 days

**CPT Code Information:** 82384

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FCATE 57554

**Catfish (Siluriformes spp) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

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**CPT Code Information:** 86003

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FCLPS 91193

**Cathartic Laxatives Profile, Stool**

**Specimen Requirements:** 10 g of stool. No preservative. Send specimen in a acid-washed or trace metal-free plastic container, MML supply T656. Send specimen refrigerated.

**Specimen Minimum Volume:** 10 mL stool liquid or 10 g stool solid

**Transport Temperature:**
Fecal Refrigerated (preferred) 30 days

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**CPT Code Information:** 83735-Magnesium; 84100-Phosphorus Inorganic (Phosphate);

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FCAFG 57680

**Cauliflower IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

CPT Code Information: 86001

**CALFL**

**Cauliflower, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL x number of allergens}) + 0.25 \text{ mL}\) dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**CBC**

**CBC with Differential, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 48 hours
- Ambient 24 hours

CPT Code Information: 85025; 85007 (if appropriate); 85060 (if appropriate);

**CD10**

**CD10 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
CD103 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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CD11c Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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CD123 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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CD13 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25-75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
CD138 (Syndecan) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

CD14 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

CD15 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
CD163 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD19 Immunostain, Bone Marrow, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed, decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded bone marrow tissue block.

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD19 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD1a Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
CD2B 603203

**CD2 Immunostain, Bone Marrow, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed, decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded bone marrow tissue block.

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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CD2 70384

**CD2 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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CEE20 65660

**CD20 Cell Expression Evaluation, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA Specimen Volume: 10 mL Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood. Specimen Stability Information: Ambient/Refrigerated Specimen Type: Bone marrow Container/Tube: Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA Specimen Volume: 1-5 mL Collection Instructions: 1. Label specimen as bone marrow. 2. Submission of bilateral specimens is not required. Specimen Stability Information: Ambient/Refrigerated

**Specimen Minimum Volume:  3 mL**

**Transport Temperature:**
- Varies 4 days

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 3-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker; 88187-Flow Cytometry Interpretation, 2 to 8 Markers;
**CD20 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CD20 on B Cells**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Additional Information: 1. Secondary aliquot tubes will be rejected. 2. Testing will be canceled if the specimen is not received ambient.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 4 days

**CPT Code Information:** 86355; 86356;

**CD21 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CD22 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CD23 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CD25 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CD273 (PD-L2) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
CD279 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD3 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD30 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD31 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information**: 88342-TC, primary; 88341-TC, if additional IHC;

**CD33 Immunostain, Technical Component Only**

**Specimen Requirements**: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature**:
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information**: 88342-TC, primary; 88341-TC, if additional IHC;

**CD34 Immunostain, Technical Component Only**

**Specimen Requirements**: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature**:
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information**: 88342-TC, primary; 88341-TC, if additional IHC;

**CD35 Immunostain, Technical Component Only**

**Specimen Requirements**: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature**:
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information**: 88342-TC, primary; 88341-TC, if additional IHC;
CD38 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

CD4 Count for Immune Monitoring, Blood

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: 4 mL Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 72 hours

**CPT Code Information:** 86359-T cells, total count; 86360-Absolute CD4/CD8 count with ratio;

CD4 Count for Monitoring, New York, Blood

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: 4 mL Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 72 hours

**CPT Code Information:** 86359; 86360;

CD4 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated
**CD4 T-Cell Recent Thymic Emigrants (RTE)**

**Specimen Requirements:**
- Supplies: Ambient Mailer-Critical Specimens Only (T668)
- Container/Tube: Lavender top (EDTA)
- Specimen Volume: 3 mL
- Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Whole Blood EDTA  Ambient 48 hours

CPT Code Information: 86356

**CD43 Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY  Ambient  
  (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**CD45 Leukocyte Common Antigen (LCA) Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY  Ambient  
  (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**CD49d Cell Expression Evaluation, Varies**

**Specimen Requirements:**
- Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA
- Specimen Volume: 10 mL
- Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood.
- Specimen Stability Information: Ambient/Refrigerated
- Specimen Type: Bone marrow

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA
Specimen Volume: 1-5 mL
Collection Instructions: 1. Label specimen as bone marrow. 2. Submission of bilateral specimens is not required. Specimen Stability Information: Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow Aspirate: 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 3-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker; 88187-Flow Cytometry Interpretation, 2 to 8 Markers;

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**CD5 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**CD52 Cell Expression Evaluation, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA Specimen Volume: 10 mL Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood. Specimen Stability Information: Ambient/Refrigerated Specimen Type: Bone marrow Container/Tube: Preferred: Yellow top (ACD) Acceptable: Sodium heparin or EDTA Specimen Volume: 1-5 mL Collection Instructions: 1. Label specimen as bone marrow. 2. Submission of bilateral specimens is not required. Specimen Stability Information: Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow Aspirate: 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 3-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker; 88187-Flow Cytometry Interpretation, 2 to 8 Markers;

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**CD56 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD57
70395
CD57 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD61
70397
CD61 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CDKPB
603209
CD68 (KP1) Immunostain, Bone Marrow, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed, decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded bone marrow tissue block.

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated
CDKP1
70486

CD68 (KP1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

PGM1
70536

CD68 (PG-M1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD7
70399

CD7 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CD71
70398

CD71 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### CD79

**CD79a Immunostain, Technical Component Only**

**Specimen Requirements:**
Supplies: Immunostain Technical Only Envelope (T693)
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### CD8I

**CD8 Immunostain, Technical Component Only**

**Specimen Requirements:**
Supplies: Immunostain Technical Only Envelope (T693)
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### GLICP

**CD8 T-Cell Immune Competence Panel, Global**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Supplies: Ambient Mailer-Critical Specimens Only (T668) Two separate specimens are required. Specimen Type: EDTA whole blood Container/Tube: 4 mL Lavender top (EDTA)
Specimen Volume: 3 mL
Collection Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Label specimen as blood for TBBS / Quantitative Lymphocyte Subsets: T, B, and Natural Killer (NK)
Specimen Type: Sodium heparin whole blood Container/Tube: Green top (sodium heparin)
Specimen Volume: 15 mL
Collection Instructions: Label specimen as blood for GLIC / CD8 T-Cell Immune Competence, Global, Blood.

**Specimen Minimum Volume:** CD8 Immune Competence: 10 mL; Quantitative Lymphocyte Subsets: 1 mL

**Transport Temperature:**
**GLIC 89317**

**CD8 T-Cell Immune Competence, Global, Blood**

**Specimen Requirements:** Supplies: Ambient Mailer-Critical Specimens Only (T668)  
Container/Tube: Green top (sodium heparin)  
Specimen Volume: 15 mL  
Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 10 mL  
**Transport Temperature:**  
WB Sodium Heparin  
Ambient 48 hours

**CPT Code Information:** 86356 x 2

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**CD99 70508**

**CD99 (MIC-2) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)  
Specimen Type: Tissue  
Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**  
TECHONLY Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**CDH1Z 35383**

**CDH1 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant.  
Specimen Type: Whole blood  
Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant  
Specimen Volume: 3 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Varies Ambient  
(preferred)  
Frozen  
Refrigerated

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**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
CDKZ 35385

**CDKN1C Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

**Specimen Minimum Volume:** Blood: 1 mL

**Transport Temperature:**

Varies

CPT Code Information: 81406-CDH1 (cadherin 1, type 1, E-cadherin [epithelial]) (eg, hereditary diffuse gastric cancer), full gene sequence; ; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

CDX2 70401

**CDX2 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CEBPA 60444

**CEBPA Mutations, Gene Sequencing**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral Blood Container/Tube: EDTA (lavender top or ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) or ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label
specimen as bone marrow. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of the DNA. Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Varies
- Varies 7 days

**CPT Code Information:** 81218-CEBPA (CCAAT/enhancer binding protein [C/EBP], alpha) (eg, acute myeloid leukemia), gene analysis, full gene sequence

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**FRCE 57952**

**Cedar Red (Juniperus virginiana) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**CEDR 82482**

**Cedar, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FCELG 57638**

**Celery IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
Frozen: 365 days  
Ambient: 7 days

**CPT Code Information:** 86001

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**CELY 82766**

**Celery, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CELI 88906**

**Celiac Associated HLA-DQ Alpha 1 and DQ Beta 1 DNA Typing, Blood**

**Specimen Requirements:** Container/Tube: Yellow top (ACD solution B) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Whole Blood ACD-B Refrigerated (preferred)
- Ambient

**CPT Code Information:** 81376 x 2-HLA Class II typing, low resolution (eg, antigen equivalents); one locus (eg, HLA-DRB1/3/4/5, -DQB1, -DQA1, -DPB1, or -DPA1), each; ;

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**CDCOM 89201**

**Celiac Disease Comprehensive Cascade**

**Specimen Requirements:** Both blood and serum are required. Specimen Type: Blood Container/Tube: Yellow top (ACD [solution B]) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL

**Specimen Minimum Volume:** Blood: 3 mL; Serum: 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 14 days
- Whole Blood ACD-B Refrigerated (preferred)
- Ambient
CPT Code Information: 82784-IgA; 81376 x2-HLA-DQ Typing; 83516-Deamidated gliadin IgA (if appropriate); 83516-Deamidated gliadin IgG (if appropriate); 83516-tTG IgA (if appropriate); 83516-tTG IgG (if appropriate); 86255-Endomysial antibodies (if appropriate);

CDGF
89200

Celiac Disease Gluten-Free Cascade

Specimen Requirements: Both blood and serum are required. Specimen Type: Blood Container/Tube: Yellow top (ACD solution B) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL

Specimen Minimum Volume: Blood: 3 mL/Serum 1.5 mL

Transport Temperature:
- Serum: Refrigerated (preferred) 7 days
- Frozen: 14 days

Whole Blood ACD-B: Refrigerated (preferred)

Ambient

CPT Code Information: 81376 x 2-HLA-DQ typing; 82784-IgA (if appropriate); 83516-Deamidated gliadin IgA (if appropriate); 83516-Deamidated gliadin IgG (if appropriate); 83516-tTG IgA (if appropriate); 83516-tTG IgG (if appropriate);

CDSP
89199

Celiac Disease Serology Cascade

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL

Specimen Minimum Volume: 1.5 mL

Transport Temperature:
- Serum: Refrigerated (preferred) 7 days
- Frozen: 14 days

CPT Code Information: 82784-IgA; 83516-Deamidated gliadin IgA (if appropriate); 83516-Deamidated gliadin IgG (if appropriate); 83516-tTG IgA (if appropriate); 83516-tTG IgG (if appropriate); 86255-Endomysial antibodies (if appropriate);

CCBF
8419

Cell Count and Differential, Body Fluid

Specimen Requirements: For Local Accounts Only Sources: Synovial, pleural, peritoneal and pericardial Container/Tube: Preferred: Body fluid container Acceptable: EDTA or heparin Specimen Volume: 1 mL

Specimen Minimum Volume: 0.7 mL

Transport Temperature:
- Body Fluid: Ambient (preferred) 24 hours
- Refrigerated: 24 hours
CPT Code Information: 89051-Cell count with differential count; 88108-Cytology for abnormal cells (if appropriate);

**CBPAN 35795**

**Cell-Bound Platelet Autoantibody Screen, Blood**

**Specimen Requirements:** Patient Preparation: Do not collect within 72 hours of a platelet transfusion. Transfused platelets will interfere with this assay. Container/Tube: Lavender top (EDTA) Specimen Volume: 20 mL Collection Instructions: The patient must have a platelet count >10,000/microliter.

**Specimen Minimum Volume:** Adults: 10 mL; Pediatrics: 5 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 48 hours

CPT Code Information: 86023

**BRAFB 65100**

**Cell-Free DNA BRAF V600 Test, Blood**

**Specimen Requirements:** Supplies: Streck Black/Tan Top Tube Kit (T715) Specimen Volume: Two, 10-mL Streck Cell-Free DNA blood collection tubes Additional Information: 1. Only blood collected in Streck Cell-Free DNA BCT tubes will be accepted for analysis. 2. Whole blood will be processed to produce platelet-poor plasma before cfDNA isolation.

**Specimen Minimum Volume:** One 10 mL Streck tube

**Transport Temperature:**
Whole blood Ambient (preferred) 7 days
Refrigerated 7 days

CPT Code Information: 81210

**EGFRD 113402**

**Cell-Free DNA EGFR Exon 18, 19, 20, 21, Mutation Analysis, Blood**

**Specimen Requirements:** Specimen Type: Plasma Collection Container/Tube: Lavender top (K2 EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 10 mL Collection Instructions: 1. Draw specimen in Lavender top (K2 EDTA). 2. Centrifuge within 4 hours. Aliquot and freeze plasma.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma EDTA Frozen 365 days

CPT Code Information: 81235

**T790M 113410**

**Cell-Free DNA EGFR T790M Mutation Analysis, Blood**

**Specimen Requirements:** Supplies: Streck Black/Tan Top Tube Kit (T-715) Specimen Volume: Two 10-mL Streck Cell-Free DNA blood collection tubes Additional Information: 1. Only blood collected in Streck Cell-Free DNA BCT tubes will be accepted for analysis. Whole blood will be processed to
produce platelet poor plasma before cfDNA isolation. 2. Samples should be transported at room
temperature or refrigerated (4±2°C) 3. Samples are viable for 7 days in the Streck Cell-Free DNA BCT
tube.

**Specimen Minimum Volume:** One 10 mL Streck tube

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Whole blood</th>
<th>Ambient (preferred)</th>
<th>7 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerated</td>
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<td>7 days</td>
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</table>

**CPT Code Information:** 81235

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**Cell-free DNA KRAS 12, 13, 61,146, Blood**

**Specimen Requirements:** Supplies: Streck Black/Tan Top Tube Kit (T715) Container/Tube:
Streck Cell-Free DNA blood collection kit (T715) Specimen Volume: Two 10-mL Streck Cell-Free
DNA blood collection tubes Additional Information: Only blood collected in Streck Cell-Free DNA
BCT tubes will be accepted for analysis. Whole blood will be processed to produce platelet-poor plasma
before cfDNA isolation.

**Specimen Minimum Volume:** One 10 mL Streck tube

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Whole blood</th>
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<th>7 days</th>
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<tbody>
<tr>
<td>Refrigerated</td>
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</table>

**CPT Code Information:** 81275; 81276;

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**Cell-Free DNA Prenatal Screen**

**Specimen Requirements:** Supplies: Streck Black/Tan Top Tube Kit (T715) Specimen Volume:
Two 10-mL Streck Cell-Free DNA blood collection tubes Additional Information: 1. Specimens
received from patients who are considered "low risk" will not be rejected but insurance may not cover
testing. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** One 10 mL Streck tube

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Whole blood</th>
<th>Ambient (preferred)</th>
<th>7 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerated</td>
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<td>7 days</td>
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</table>

**CPT Code Information:** 81420

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**Cell-Free DNA Prenatal Screen, Autosomal Trisomy and Sex
Chromosome Aneuploidy**

**Specimen Requirements:** Supplies: Streck Black/Tan Top Tube Kit (T715) Specimen Volume:
Two 10-mL Streck Cell-Free DNA blood collection tubes Additional Information: 1. Specimens
received from patients who are considered "low risk" will not be rejected but insurance may not cover
testing. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** One 10-mL Streck tube
Transport Temperature:
Whole blood Ambient (preferred) 7 days
Refrigerated 7 days

CPT Code Information: 81420

Central Nervous System Consultation, Autopsy

Specimen Requirements: Hematoxylin-and-eosin stained sections are also acceptable, but must be accompanied by paraffin blocks and/or remaining wet tissue. In cases submitted as part of a research protocol, please contact 507-284-3887 for further guidance. Supplies: Central Nervous System Consult Kit (T633) Sources: Brain (and spinal cord when indicated) Container/Tube: Plastic container Specimen Volume: 1 cm(3) cube Collection Instructions: 1. Take a small (1 cm[3]) cube of brain from 1 of the frontal lobes (typically, right inferior frontal). 2. Wrap in aluminum foil and place in plastic container. 3. Label container with identifying information (ie, patient name, date of birth, autopsy number, and date of collection). 4. Freeze and store in a -70°C freezer. 5. Place the remaining brain in 10% formalin if non-CJD, and 15% formalin for suspected cases of CJD, suspended by a thread under the basilar artery and fixed for 7 to 10 days. Additional Information: Upon completion of consultation, the brain tissue will be stored indefinitely in the Mayo Clinic Tissue Registry. The Mayo Clinic policy precludes our evaluation of cases under litigation that involve non-Mayo Clinic patients.

Specimen Minimum Volume: Entire collection

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 88037 (if appropriate); 88036 (if appropriate);

Centromere Antibodies, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.35 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 83516

Cephalosporium acremonium, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**CTSA 81979**

**Ceramide Trihexosides and Sulfatides, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 2 mL Collection Instructions: Collect a first-morning, random urine specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Frozen (preferred) 45 days
Ambient 45 days
Refrigerated 45 days

**CPT Code Information:** 82542

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**CTSNR 37998**

**Ceramide Trihexosides and Sulfatides, Urine**

**Specimen Requirements:** Only orderable as part of a profile. See LYSDU / Lysosomal Storage Disorders Screen, Urine. For more information regarding ceramide trihexosides and sulfatides, see CTSA / Ceramide Trihexosides and Sulfatides, Urine. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 1 mL Pediatric Volume: 0.5 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Urine Frozen (preferred) 45 days
Ambient 45 days
Refrigerated 45 days

**CPT Code Information:** 82542

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**CERAM 65054**

**Ceramides, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge, aliquot at least 1 mL plasma and freeze within 8 hours.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 30 days
### Cerebrospinal Fluid (CSF) IgG Index

**Specimen Requirements:** Both serum and spinal fluid are required. Specimens must be obtained within 1 week of each other. Specimen Type: Serum Container/Tube: Red top or serum gel Specimen Volume: 1 mL Collection Instructions: Label specimen as serum. Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: Label specimen as spinal fluid.

**Specimen Minimum Volume:** Serum: 0.5 mL Spinal Fluid: 0.5 mL

**Transport Temperature:**
- CSF: Refrigerated (preferred) 14 days
- Ambient: 14 days
- Frozen: 14 days
- Serum: Refrigerated (preferred) 14 days
- Ambient: 14 days
- Frozen: 14 days

**CPT Code Information:** 82040-Albumin, serum; 82042-Albumin, spinal fluid; 82784 x 2-IgG, serum and spinal fluid;

### Certolizumab pegol and Anti-Certolizumab Antibodies, Serum

**Specimen Requirements:** Specimen Type: SST Serum Container/Tube: SST Specimen Volume: 7 mL Collection Instructions: Draw blood in a serum gel tube(s), plain red-top tube(s) is NOT acceptable. Spin down and send 7 mL of serum refrigerated (DO NOT ALIQUOT).

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Serum SST: Refrigerated (preferred) 7 days
- Ambient: 48 hours

**CPT Code Information:** 80299; 83520;

### Ceruloplasmin, Serum

**Specimen Requirements:** Patient Preparation: Patient should be fasting (4 hours preferred, nonfasting acceptable). Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

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Refrigerated 24 hours
Ambient 8 hours

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CPT Code Information: 82542
Serum Refrigerated (preferred)  7 days
Frozen                     30 days

CPT Code Information: 82390

**CFTRZ 35388**

**CFTR Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Patient education brochures in English (T548) and Spanish (T563) are available upon request.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Varies Ambient (preferred)
- Frozen
- Refrigerated

CPT Code Information: 81223-CFTR (cystic fibrosis transmembrane conductance regulator) (eg, cystic fibrosis) gene analysis; full gene sequence; 81222;

**CHGL 82384**

**Chaetomium globosum, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen                     90 days

CPT Code Information: 86003

**FAMCE 57914**

**Cheese American IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen                     365 days
**FCCGG** 57573

**Cheese Cheddar IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86003

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**FSCE** 57936

**Cheese Swiss IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86001

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**CCHZ** 82752

**Cheese, Cheddar, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**MCHZ** 82751

**Cheese, Mold, IgE**
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

CHEK2 Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81479-Unlisted molecular pathology code; ; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

Cherry, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Chestnut Tree, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Chestnut, Sweet, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

CHIC2 (4q12) Deletion (FIP1L1 and PDGFRA Fusion), FISH

Specimen Requirements: Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

Specimen Minimum Volume: Blood: 2 mL/Bone Marrow: 1 mL

Transport Temperature:
Varies Ambient (preferred) Refrigerated

CPT Code Information: 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Chick Pea, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Chicken Droppings, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Chicken Feathers, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Chicken IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

### Chicken Serum Proteins, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

### Chicken, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

### Chikungunya IgG, Antibody, Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see CHIKV / Chikungunya IgM and IgG, Antibody, Serum.

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
  - Frozen 30 days
**CHIKV**

64173

**Chikungunya IgM and IgG, Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86790

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**CHIKM**

63867

**Chikungunya IgM, Antibody, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see CHIKV / Chikungunya IgM and IgG, Antibody, Serum.

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** IgM: 86790; IgG: 86790;

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**CHIKI**

37102

**Chikungunya Interpretation**

**Specimen Requirements:** Only orderable as part of a profile. For more information see CHIKV / Chikungunya IgM and IgG, Antibody, Serum.

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86790

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**FCVRQ**

58028

**Chikungunya Virus RNA, Qualitative Real-Time PCR**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 0.7 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.7 mL serum in a screw-capped vial, shipped refrigerate.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days
- Ambient 48 hours
**CPT Code Information:** 87798

**CHILI**

82499

**Chili Pepper, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**CHIMU**

62983

**Chimerism Transplant No Cell Sort**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 4 mL Collection Instructions: 1. Only 1 tube is required. 2. Invert several times to mix blood. 3. Send specimen in original tube. 4. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow: 2 mL Lesser volumes may be acceptable, depending on white cell count. Call 800-533-1710 or 507-266-5700 with questions.

**Transport Temperature:**
- Varies Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81267-Chimerism (engraftment) analysis, post hematopoietic stem cell transplantation specimen, includes comparison to previously performed baseline analyses; without cell selection

**CHIMS**

62984

**Chimerism Transplant Sorted Cells**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 4 mL Collection Instructions: 1. Only 1 tube is required. 2. Invert several times to mix blood. 3. Send specimen in original tube. 4. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood: 3 mL; Bone Marrow: 2 mL/Lesser volumes may be acceptable, depending on white cell count.

**Transport Temperature:**
- Varies Ambient (preferred) 4 days
- Refrigerated 4 days
**CPT Code Information:** 81268-Chimerism (engraftment) analysis, post hematopoietic stem cell transplantation specimen, includes comparison to previously performed baseline analyses; with cell selection (eg, CD3, CD33), each cell type (if appropriate)

**CHIDB**

**Chimerism-Donor**

**Specimen Requirements:** Complete chimerism analysis also requires submission of CHRGB / Chimerism-Recipient Germline (Pre) and CHIMU / Chimerism Transplant No Cell Sort or CHIMS / Chimerism Transplant Sorted Cells specimens. These tests must be ordered on both the pre- and post-specimens under separate order numbers. The 3 specimens do not need to be submitted at the same time. Submit only 1 of the following specimens: 

- **Specimen Type:** Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood.

- **Specimen Type:** Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

- **Specimen Type:** Buccal swab Supplies: Buccal Swab Kit (T543) Container/Tube: Buccal Smear Collection Kit (T543) Specimen Volume: 2 Cyto-Pak brushes-1 per cheek Collection Instructions: 1. Patient should rinse out mouth vigorously with mouthwash for approximately 15 seconds. 2. Remove Cyto-Pak brush from container only touching “stick” end. Save container. 3. Using medium pressure, rotate brush several times on inside of cheek. 4. Return brush to container and cap. 5. Repeat steps 2 through 4 on other cheek using second brush. 6. It is important that patient's buccal cells are not contaminated with cells from any other source. Do not touch bristles. Do not brush too vigorously. If blood appears, discard brush. Restart collection process. 7. Label each container with patient’s name and order number or hospital/clinic number. 

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow: 2 mL Lesser volumes may be acceptable, depending on white cell count. Call 800-533-1710 or 507-266-5700 with questions.

**Transport Temperature:**
- Varies Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81265-Comparative analysis using short tandem repeat (STR) markers; patient and comparative specimen (e.g., pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [e.g., buccal swab or other germline tissue sample] and donor testing, twin zyosity testing or maternal cell contamination of fetal cells)

**CHRGB**

**Chimerism-Recipient Germline (Pre)**

**Specimen Requirements:** Submit only 1 of the following specimens: 

- **Specimen Type:** Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood.

- **Specimen Type:** Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

- **Specimen Type:** Buccal swab Supplies: Buccal Swab Kit (T543) Container/Tube: Buccal Smear Collection Kit (T543) Specimen Volume: 2 Cyto-Pak brushes-1 per cheek Collection Instructions: 1. Patient should rinse out mouth vigorously with mouthwash for approximately 15 seconds. 2. Remove Cyto-Pak brush from container only touching “stick” end. Save container. 3. Using medium pressure, rotate brush several times on inside of cheek. 4. Return brush to container and cap. 5. Repeat steps 2 through 4 on other cheek using second brush. 6. It is important that patient's buccal cells are not contaminated with cells from any other source. Do not touch bristles. Do not brush too vigorously. If blood appears, discard brush.
Restart collection process. 7. Label each container with patient's name and order number or hospital/clinic number. Additional Information: It is important that the cells do not dry out during shipping. Ensure that container is tightly sealed.

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow: 2 mL Lesser volumes may be acceptable, depending on white cell count. Call 800-533-1710 or 507-266-5700 with questions.

**Transport Temperature:**
Varies Ambient (preferred) 7 days
Refrigerated 7 days

**CPT Code Information:** 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (e.g., pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [e.g., buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells)

**FCPP 57339**

**Chlamydia Pneumoniae PCR**

**Specimen Requirements:** Submit one of the following: Serum Specimen Type: Serum Container/Tube: Red Specimen Volume: 1mL Collection Instructions: Draw blood in a plain red-top tube(s), (SST NOT acceptable). Spin down and send 1 mL serum in a screw-capped vial, shipped frozen. Plasma Specimen Type: Whole blood or Plasma Container/Tube: 4 mL or 6 mL lavender-top EDTA tube Specimen Volume: 4 mL or 6 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). Spin down as soon as possible and send 4 mL or 6 mL of EDTA plasma frozen in a plastic vial. Acceptable Alternative Specimen Type: Bronchial Wash or Sputum Sources: Bronchial Wash or Sputum Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Collect 1 mL in a sterile container. Ship frozen. Note: Source required.

**Specimen Minimum Volume:** 0.5 mL pediatric

**Transport Temperature:**
Varies Frozen (preferred) 180 days
Refrigerated 72 hours
Ambient 12 hours

**CPT Code Information:** 87486

**SCLAM 8142**

**Chlamydia Serology, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.2 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 30 days
Frozen 30 days

**CPT Code Information:** 86631 x 3-IgG; 86632 x 3-IgM;

**CGRNA**

Chlamydia trachomatis and Neisseria gonorrhoeae by Nucleic
Acid Amplification (HOLOGIC)

Specimen Requirements: Submit only 1 of the following specimens: Swab specimen must be collected using an Aptima Collection Unisex Swab (T583) or Aptima Collection Multitest Swab (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit). These swabs are contained in the Aptima Collection Kit. Supplies: Swab, Aptima Male/Female Collection (T583) Specimen Type: Endocervix Container/Tube: Aptima Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Use cleaning swab (white shaft) to remove excess mucus from endocervix and discard. 2. Insert second swab (blue shaft) 1 to 1.5 cm into endocervical canal, and rotate swab gently for 30 seconds. Avoid touching vaginal wall when removing swab. 3. Place second swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 4. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 5. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Swab, Aptima Multitest Swab Specimen Collection Kit (T584) Specimen Type: Vaginal Container/Tube: Aptima Collection Multitest Swab (T584) Specimen Volume: Swab Collection Instructions: 1. Insert swab (pink shaft) about 5 cm past introitus and rotate gently for 30 seconds. 2. Place swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Swab, Aptima Male/Female Collection (T583) Specimen Type: Urethra (Males Only) Container/Tube: Aptima Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to collection. 2. With a rotating movement, insert swab (blue shaft) 2 to 4 cm into urethra. 3. Once inserted, rotate swab gently at least 1 full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds. 4. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 5. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 6. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Aptima Urine Transport Tube (T582) Specimen Type: Urine (Males and Females) Container/Tube: Aptima Urine Specimen Transport Tube (T582) Specimen Volume: 15-20 mL Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to specimen collection. 2. Patient should collect first portion of random voided urine (first part of stream) into a sterile, plastic, preservative-free container. 3. Transfer 2 mL of urine into the urine specimen transport tube using the disposable pipette provided within 24 hours of collection. The correct volume of urine has been added when the fluid level is between the black fill lines on the urine transport tube. Place the labels on the transport tube so the black fill lines are still visible for volume confirmation at Mayo Clinic Laboratories. 4. Transport and store urine specimen transport container at 2 to 30°C (refrigerate is preferred temperature) within 30 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: ThinPrep Specimen (Endocervix) Container/Tube: ThinPrep Specimen (also called PreservCyt) Collection Kit Specimen Volume: 1 mL Collection Instructions: 1. Aliquot ThinPrep specimen for Chlamydia and/or Neisseria testing before processing for Pap smear. For each specimen, use a new pair of clean gloves. 2. Vortex ThinPrep/PreservCyt vial 3 to 10 seconds. Within 1 minute of vortexing: a. Transfer 1 mL of specimen into the APTIMA Specimen Transfer Tube (T652) using a disposable transfer pipette or a pipette tip containing a filter (aerosol barrier or hydrophobic plug). b. Process only 1 ThinPrep and transfer tube set at a time. c. Recap APTIMA Specimen Transfer Tube tightly and gently invert 3 times to mix. 3. Label APTIMA transfer tube with appropriate label. 4. Use remainder of ThinPrep specimen for Pap testing. 5. Transport and store specimen transfer container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months.

Specimen Minimum Volume: Endocervical in PreservCyt: 1mL Urine: 2 mL Swabs (Endocervical, Urethral, Vaginal): Entire Collection

Transport Temperature:
Varies Refrigerated  
(preferred)  
Ambient  
Frozen

**CPT Code Information:** 87491-Chlamydia trachomatis; 87591-Neisseria gonorrhoeae;

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**CTRNA 61551**  
**Chlamydia trachomatis by Nucleic Acid Amplification (HOLOGIC)**

**Specimen Requirements:** Submit only 1 of the following specimens: Swab specimen must be collected using an Aptima Collection Unisex Swab (T583), or Aptima Collection Multitest Swab (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit). These swabs are contained in the Aptima Collection Kit. Supplies: Swab, Aptima Male/Female Collection (T583) Specimen Type: Endocervix Container/Tube: Aptima Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Use cleaning swab (white shaft) to remove excess mucus from endocervix and discard. 2. Insert second swab (blue shaft) 1 to 1.5 cm into endocervical canal, and rotate swab gently for 30 seconds. Avoid touching vaginal wall when removing swab. 3. Place second swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 4. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 5. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Swab, Aptima Multitest Swab Specimen Collection Kit (T584) Specimen Type: Vaginal Container/Tube: Aptima Collection Multitest Swab (T584) Specimen Volume: Swab Collection Instructions: 1. Insert swab (pink shaft) about 5 cm past introitus and rotate gently for 30 seconds. 2. Place swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Swab, Aptima Male/Female Collection (T583) Specimen Type: Urethra (Males Only) Container/Tube: Aptima Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to collection. 2. With a rotating movement, insert swab (blue shaft) 2 to 4 cm into urethra. 3. Once inserted, rotate swab gently at least 1 full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds. 4. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 5. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 6. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Aptima Urine Transport Tube (T582) Specimen Type: Urine (Males and Females) Container/Tube: Aptima Urine Specimen Transport Tube (T582) Specimen Volume: 15-20 mL Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to specimen collection. 2. Patient should collect first portion of random voided urine (first part of stream) into a sterile, plastic, preservative-free container. 3. Transfer 2 mL of urine into the urine specimen transport tube using the disposable pipette provided within 24 hours of collection. The correct volume of urine has been added when the fluid level is between the black fill lines on the urine transport tube. Place the labels on the transport tube so the black fill lines are still visible for volume confirmation at Mayo Clinic Laboratories. 4. Transport and store urine specimen transport container at 2 to 30°C (refrigerate is preferred temperature) within 30 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Aptima Thin Prep Transport Tube (T652) Specimen Type: ThinPrep Specimen (Endocervix) Container/Tube: ThinPrep (also called PreservCyt) Collection Kit Specimen Volume: 1 mL Collection Instructions: 1. Aliquot ThinPrep specimen for Chlamydia and/or Neisseria testing before processing for Pap smear. For each specimen, use a new pair of clean gloves. 2. Vortex ThinPrep/PreservCyt vial 3 to 10 seconds. Within 1 minute of vortexing: a. Transfer 1 mL of specimen into the Aptima Specimen Transfer Tube (T652) using a disposable transfer pipette or a pipette tip containing a filter (aerosol barrier or hydrophobic plug). b. Process only 1 ThinPrep and transfer tube set...
at a time. c. Recap Aptima Specimen Transfer Tube tightly and gently invert 3 times to mix. 3. Label Aptima transfer tube with appropriate label. 4. Use remainder of ThinPrep specimen for Pap testing. 5. Transport and store specimen transfer container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months.

**Specimen Minimum Volume:**
- Endocervix in PreservCyt: 1mL Urine: 2 mL Swabs (Endocervical, Urethral, Vaginal): Entire Collection

**Transport Temperature:**
- Varies
  - Refrigerated (preferred)
  - Ambient
  - Frozen

**CPT Code Information:** 87491

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**MCRNA**

**Chlamydia trachomatis, Miscellaneous Sites, by Nucleic Acid Amplification**

**Specimen Requirements:** Swab specimens must be collected using an Aptima Collection Unisex Swab (T583), or Aptima Collection Multitest Swab (T584). These swabs are contained in the Aptima Collection Kit. Submit only 1 of the following specimens: Supplies: Swab, Aptima Male/Female Collection (T583) Swab, Aptima Multitest Swab Specimen Collection Kit (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit) Specimen Type: Oral/throat or ocular (corneal/conjunctiva) or rectal/anal Container/Tube: Aptima Collection Multitest Swab (T584) or Aptima Swab Collection System (T583) Specimen Volume: Swab Collection Instructions: 1. Swab site using Aptima Collection Multitest Swab (T584) or Aptima Collection Unisex Swab (T583). Note: The white swab provided within the collection kit is a cleaning swab and should not be used for collection. Discard the white cleaning swab. 2. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport swab container to laboratory and store (refrigerated is preferred) within 60 days of collection. Supplies: Aptima Thin Prep Transport Tube (T652) Specimen Type: Peritoneal fluid (pelvic wash, cul-de-sac fluid) Container/Tube: Aptima Specimen Transfer Tube (T652) Specimen Volume: 1 mL Collection Instructions: 1. Transfer specimen into the Aptima Specimen Transfer Tube (T652) within 24 hours of collection. 2. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 3. Transport Aptima Specimen Transfer Tube to laboratory (refrigerated is preferred) within 30 days of collection.

**Specimen Minimum Volume:** Oral/Throat, Ocular, Anal/Rectal Swabs: Entire collection Peritoneal Fluid: 1 mL

**Transport Temperature:**
- Varies
  - Refrigerated (preferred)
  - Ambient
  - Frozen

**CPT Code Information:** 87491

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**FCPD**

**Chlamydophila pneumoniae DNA, Qualitative Real-Time PCR**

**Specimen Requirements:** Submit only 1 of the following specimen types: Note: Source is required. Respiratory specimen (Preferred): (Throat or Nasopharyngeal) Collect respiratory specimen in...
sterile vial containing 3 mL of sterile M4 media or V-C-M medium (green-top) tube or equivalent (UTM) for swabs. Ship refrigerate. Bronchial Wash/Lavage Collect 1 mL in a sterile leak-proof container and ship refrigerated. Sputum Collect 1 mL in a sterile plastic container and ship refrigerated.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 48 hours

**CPT Code Information:** 87486

FCHLM 90343  
**Chlordane and Metabolites, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 3 mL of serum refrigerated. Note: 1. Indicate serum on report form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top (EDTA) tube(s). (Plasma gel tube is not acceptable.) Spin down and send 3 mL of EDTA plasma refrigerated. Note: 1. Indicate plasma on report form. 2. Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 150 days
- Frozen 150 days
- Ambient 14 days

**CPT Code Information:** 82441

CDP 8610  
**Chlordiazepoxide and Metabolite, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL Collection Container/Tube: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 80346; G0480 (if appropriate);

CLU 8531  
**Chloride, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional Information: See Urine
Preservatives—Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 82436

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**CLBF**

**Chloride, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge to remove any cellular material. 2. Indicate specimen source. Additional Information: For spinal fluid, see CLSF / Chloride, Spinal Fluid.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Refrigerated 7 days

**CPT Code Information:** 82436

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**RCHLU**

**Chloride, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 82436

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**CL**

**Chloride, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
CPT Code Information: 82435

CLSF

Chloride, Spinal Fluid
Specimen Requirements: Container/Tube: Sterile vial Specimen Volume: 1 mL
Specimen Minimum Volume: 0.25 mL
Transport Temperature:
CSF Refrigerated (preferred) 7 days
    Frozen 30 days

CPT Code Information: 82438

FCHPZ

Chlorpromazine (Thorazine)
Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.25 mL
Transport Temperature:
Varies Refrigerated (preferred) 7 days
    Frozen 180 days
    Ambient 72 hours

CPT Code Information: 80342

FCHCG

Chocolate/Cacao IgG
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
    Frozen 365 days
    Ambient 7 days

CPT Code Information: 86001

FCCK

Cholecystokinin (CCK)
Specimen Requirements: Container/Tube: Special tube containing G.I. preservative (MML Supply T125) Specimen Volume: 3 mL Collection Instructions: 1. Patient should fast for 10 to 12 hours prior to collection. 2. Collect 10 mL of blood in special tube. 3. Specimen should be separated immediately and plasma frozen as soon as possible. Additional Information: Antacid medications and
medications that affect intestinal motility should be discontinued, if possible, for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
GI Plasma  Frozen 30 days

**CPT Code Information:** 83519

### CHLBF

**Cholesterol, Body Fluid**

**Specimen Requirements:** Collection Container/Tube: Sterile container Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Body Fluid  Frozen (preferred)  30 days
Refrigerated  7 days
Ambient  24 hours

**CPT Code Information:** 84311-Spectrophotometry, analyte not specified (cholesterol)

### HDCH

**Cholesterol, High-Density Lipoprotein (HDL), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tube must be centrifuged within 2 hours of draw time. 2. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum  Refrigerated (preferred)  7 days
Frozen  30 days

**CPT Code Information:** 83718

### CHOL

**Cholesterol, Total, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum  Refrigerated (preferred)  7 days
Frozen  90 days
CHLE
Cholesteryl Esters, Serum

**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

CPT Code Information: 82465

FCNAB
Chromatin (Nucleosomal) Antibody

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days
  - Ambient 4 days

CPT Code Information: 84311

CROMU
Chromium for Occupational Monitoring, Urine

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

CPT Code Information: 82495 Chromium, Concentration; 82570 Creatinine Concentration;
Chromium, 24 Hour, Urine

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives—Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. 3. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82495

Chromium, Blood

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Collection Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 1 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Whole blood Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82495

Chromium, Random, Urine

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 6 mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.4 mL
**Transport Temperature:**
Urine Refrigerated (preferred)  28 days
Ambient  28 days
Frozen  28 days

**CPT Code Information:** 82495

**Chromium, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: -Metal Free B-D Tube (No Additive), 6 mL (T184) -Metal Free Specimen Vial (T173) Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.6 mL. Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days
Ambient  28 days
Frozen  28 days

**CPT Code Information:** 82495

**Chromogenic Factor IX Activity Assay, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or = -40° C, if possible. 3. Freeze within 4 hours of collection. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85130

**Chromogenic Factor VIII Activity Assay, Plasma**

**Specimen Requirements:**
**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. 3. Freeze within 4 hours of collection. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85130

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**Chromogranin A, Serum**

**Specimen Requirements:** Patient Preparation: Proton pump inhibitor drugs should be discontinued for at least 2 weeks before collection. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 0.5 mL Collection Information: Spin down and remove serum from clot. Do not submit in original tube.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Frozen 365 days

**CPT Code Information:** 86316

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**Chromogranin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Chromosomal Microarray (CMA) Familial Testing, FISH**

**Specimen Requirements:** Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Additional Information: Provide the name of the child (originally tested family member) on the request form. If testing was performed outside of Mayo Clinic Laboratories, consultation with the laboratory is required prior to ordering this test.

**Specimen Minimum Volume:** 1 mL
Transport Temperature:
Whole blood Ambient (preferred)
Refrigerated

CPT Code Information: 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88273 w/modifier 52-Chromosomal in situ hybridization, less than 10 cells (if appropriate); 88273-Chromosomal in situ hybridization, 10-30 cells (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

CMAPC 63042 Chromosomal Microarray, Autopsy, Products of Conception, or Stillbirth

Specimen Requirements: Submit only 1 of the following specimens: Supplies: Hank's Solution (T132) Specimen Type: Products of conception or stillbirth Container/Tube: Sterile container with sterile Hank's solution (T132), Ringer's solution, or normal saline Specimen Volume: 1 cm(3) of placenta (including 50-mg chorionic villi) and 1 cm(3) biopsy specimen of muscle/fascia from the thigh Collection Instructions: 1. Attempt to identify and send only fetal tissue for analysis. 2. If a fetus cannot be specifically identified, collect 50-mg villus material or tissue that appears to be of fetal origin. 3. If multiple specimen types are sent, send each specimen in a separate container. Multiple specimens received (eg, placenta and fetal thigh) will be ordered under 1 test. All specimens will be processed separately. Additional Information: 1. Do not send entire fetus. 2. While fresher specimens prepared as described above are preferred, we can attempt analysis on specimens that have been in less-than-ideal conditions. Supplies: Hank's Solution (T132) Specimen Type: Autopsy Container/Tube: Sterile container with sterile Hank's solution (T132), Ringer's solution, or normal saline Specimen Volume: 1 cm(3) biopsy specimen of muscle/fascia from the thigh Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Supplies: Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20-30 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. 3. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 4. Fill remaining space with packing material. Additional Information: 1. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 2. Bloody specimens are undesirable. 3. Results will be reported and also telephoned or faxed, if requested. Supplies: CVS Media (RPMI) and Small Dish (T095) Specimen Type: Chorionic villus Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 50 mg Collection Instructions: 1. Collect chorionic villus specimen (CVS) by transabdominal or transcervical method. 2. Transfer CVS to a Petri dish containing transport medium (Such as CVS Media [RPMI] and Small Dish [T095]). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of villi and remove any blood clots and maternal decidua. Acceptable Specimen Type: Cultured cells Container/Tube: T25 flasks with culture media Specimen Volume: 2 T25 flasks Supplies: Hank Solution (T132) Specimen Type: Tissue Container/Tube: In sterile Hank's solution (T132)

Specimen Minimum Volume: Chorionic Villus: 10 mg Muscle-Fascia: 1 cm(3)

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 81229

CMAMT 62667  
Chromosomal Microarray, Autopsy/Products of Conception/Stillbirth, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded block containing fetal or placental (including chorionic villi) tissue. Additional Information: A pathology report and reason for referral must be submitted with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Specimen Type: Slides Specimen Volume: 6 consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded tissue block Five consecutive, unstained slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

CPT Code Information: 81229

CMACB 35247  
Chromosomal Microarray, Congenital, Blood

**Specimen Requirements:** This test requires 2 blood specimens: 1 sodium heparin and 1 EDTA. Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) and lavender top (EDTA) Specimen Volume: 3 mL EDTA tube and 4 mL sodium heparin tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimens in original tubes. Additional Information: As a participant in the International Standard Cytogenomic Array Consortium, patients may request to opt-out. See Chromosomal Microarray Testing and the ISCA Consortium Database patient education flyer under Special Instructions.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Whole blood Ambient (preferred)
- Refrigerated

CPT Code Information: 81229

CMAH 35899  
Chromosomal Microarray, Hematologic Disorders

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Submit only 1 of the following specimens: Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. If sodium heparin is not available, EDTA is acceptable.
Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. If sodium heparin is not available, EDTA is acceptable.

**Specimen Minimum Volume:** Blood: 2 mL; Bone Marrow: 1 mL

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 81406

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**Chromosomal Microarray, Prenatal, Amniotic Fluid/Chorionic Villus Sampling**

**Specimen Requirements:** Submit only 1 of the following specimens: Supplies: CVS Media (RPMI) and Small Dish (T095) Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15-mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer chorionic villi to a Petri dish containing transport medium (Such as CVS Media [RPMI] and Small Dish [T095]). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Supplies: Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20-30 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. 3. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 4. Fill remaining space with packing material. Additional Information: 1. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 2. Bloody specimens are undesirable. 3. Results will be reported and also telephoned or faxed, if requested.

**Specimen Minimum Volume:** Amniotic Fluid: 12 mL Chorionic Villi: 12 mg; If ordering in conjunction with other testing: If ordered with PADF: 14 mL or 14 mg; with CHRAF: 24 mL; with CHRCV: 24 mg; with PADF and CHRAF/CHRCV: 26 mL or 26 mg

**Transport Temperature:**
Varies Refrigerated  
(preferred)  
Ambient

**CPT Code Information:** 81229

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**Chromosomal Microarray, Tumor, Formalin-Fixed Paraffin-Embedded**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Specimen Volume: 10 Consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**
CMAT 35900

**Chromosomal Microarray, Tumor, Fresh or Frozen using Affymetrix Cytoscan HD**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Include pathology reports, if available. Submit only 1 of the following specimens: Specimen Type: Tumor biopsy Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 0.5-3 cm(3) or larger Specimen Type: Lymph node Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 1 cm(3) Specimen Type: Skin biopsy Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 4-mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis.

**Specimen Minimum Volume:** Tumor Biopsy: 3 cm(3)/Lymph Node: 1 cm(3)/Skin Biopsy: 4 mm diameter

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 81406

CHRAF 35243

**Chromosome Analysis, Amniotic Fluid**

**Specimen Requirements:** Supplies: Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Type: Amniotic fluid Submission Container/Tube: Centrifuge tube Specimen Volume: 20-25 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. 2. Discard the first 2 mL of amniotic fluid. 3. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 4. Fill remaining space with packing material. Additional Information: 1. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 2. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 3. Bloody specimens are undesirable. Supplies: Refrigerate/Ambient Mailer, 5 lb (T329) Specimen Type: Fetal body fluid Container/Tube: Sterile tube Specimen Volume: Entire specimen Collection Instructions: 1. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 2. Fill remaining space with packing material. Additional Information: 1. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 2. Clearly indicate on tube and paperwork that specimen is fetal body fluid.

**Specimen Minimum Volume:** Amniotic Fluid: 12 mL; Fetal Body Fluid: NA; If ordering in conjunction with other testing: If ordered with PADF: 14 mL, with CMAP: 24 mL, with PADF and CMAP: 26 mL

**Transport Temperature:**
CHRBF 35314

**Chromosome Analysis, Body Fluid**

**Specimen Requirements:** Provide a reason for referral and the specimen source with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Sterile container Specimen Volume: 25-50 mL Collection Instructions: Collect specimen in a sterile syringe. Additional Information: Advise Express Mail or equivalent, if not on courier service.

**Specimen Minimum Volume:** 20 mL

**Transport Temperature:**

- Body Fluid Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88239, 88291- Tissue culture for tumor, Interpretation and report; 88264 w/modifier 52-Chromosome analysis less than 20 cells (if appropriate); 88264-Chromosome analysis with 20 to 25 cells (if appropriate); 88264, 88285-Chromosome analysis with greater than 25 cells (if appropriate); 88283-Additional specialized banding technique (if appropriate);

CHRCV 35251

**Chromosome Analysis, Chorionic Villus Sampling**

**Specimen Requirements:** Supplies: CVS Media (RPMI) and Small Dish (T095) Source: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect chorionic villus specimen (CVS) by the transabdominal or transcervical method. 2. Transfer the CVS to a Petri dish containing transport medium (Such as CVS media (RPMI) and Small Dish [T095]). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua.

**Specimen Minimum Volume:** 12 mg If ordering in conjunction with other testing: PADF: 14 mg CMAP: 24 mg PADF and CMAP: 26 mg

**Transport Temperature:**

- Tissue Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88235, 88291-Tissue culture for amniotic fluid or chorionic villus cells, Interpretation and report; 88267 w/modifier 52-Chromosome analysis, amniotic fluid or chorionic villus, <15 cells, 1 karyotype with banding (if appropriate); 88267-Chromosome analysis, amniotic fluid or chorionic villus, <15 cells, 1 karyotype with banding (if appropriate); 88267 w/modifier 52-Chromosome analysis, amniotic fluid or chorionic villus, greater than 15 cells, 1 karyotype with banding (if appropriate); 88267 w/modifier 52-Chromosome analysis, amniotic fluid or chorionic villus, <15 cells, 1 karyotype with banding (if appropriate);
Chromosome Analysis, Congenital Disorders, Blood

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. 3. Label specimen as whole blood. Specimen Type: Cord whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: As much as possible Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. 3. Label specimen as cord blood.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Whole blood Ambient (preferred) Refrigerated

**CPT Code Information:** 88230, 88291- Tissue culture for Lymphocytes, Interpretation and report; 88262 w/modifier 52-Chromosome analysis less than 15 cells (if appropriate); 88262-Chromosome analysis with 15 to 20 cells (if appropriate); 88262, 88285-Chromosome analysis with greater than 20 cells (if appropriate); 88280-Chromosome analysis, greater than 2 karyotypes (if appropriate); 88283-Additional specialized banding technique (if appropriate);

Chromosome Analysis, Congenital Disorders, Fixed Cells

**Specimen Requirements:** Provide a reason for referral and specimen type with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Specimen Volume: 2 mL Additional Information: Advise Express Mail or equivalent if not on courier service.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Fixed Cell Pellet Blood Ambient (preferred) Refrigerated

**CPT Code Information:** 88291; 88262-w/modifier 52 (if appropriate); 88262-(if appropriate); 88262, 88285-(if appropriate); 88280-(if appropriate); 88283-(if appropriate);

Chromosome Analysis, Hematologic Disorders, Blood

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Green top (sodium heparin) Specimen Volume: 5-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Additional Information: Advise Express Mail or equivalent if not on courier service.
Specimen Minimum Volume: 3 mL

Transport Temperature:
Whole blood  Ambient  (preferred)
Refrigerated

CPT Code Information: 88237, 88291- Tissue culture for neoplastic disorders; bone marrow, blood, Interpretation and report; 88264 w/ modifier 52- Chromosome analysis with less than 20 cells (if appropriate); 88264-Chromosome analysis with 20 to 25 cells (if appropriate); 88264,88285- Chromosome analysis with greater than 25 cells (if appropriate); 88283-Additional specialized banding technique (if appropriate); ; ;

CHRBM
35245
Chromosome Analysis, Hematologic Disorders, Bone Marrow

Specimen Requirements: Container/Tube: Green-top (sodium heparin) Specimen Volume: 2-3 mL Collection Instructions: 1. It is preferable to send the first aspirate from the bone marrow collection. 2. Invert several times to mix bone marrow. 3. Other anticoagulants are not recommended and are harmful to the viability of the cells.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Bone Marrow  Ambient  (preferred)
Refrigerated

CPT Code Information: 88237, 88291 - Tissue culture for neoplastic disorders; bone marrow, blood, Interpretation and report; 88264 w/ modifier 52 - Chromosome analysis with less than 20 cells (if appropriate); 88264 - Chromosome analysis with 20 to 25 cells (if appropriate); 88264,88285 - Chromosome analysis with greater than 25 cells (if appropriate); 88283 - Additional specialized banding technique (if appropriate); ;

CHFXH
64922
Chromosome Analysis, Hematologic Disorders, Fixed Cells

Specimen Requirements: Provide a reason for referral and specimen type with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Specimen Volume: 2 mL Additional Information: Advise Express Mail or equivalent if not on courier service.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient  (preferred)
Refrigerated

CPT Code Information: 88291; 88264 w/modifier 52 (if appropriate); 88264 (if appropriate); 88264, 88285 (if appropriate); 88283 (if appropriate);
CHRLN 35309

Chromosome Analysis, Lymphoid Tissue

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Include pathology reports, if available. Preferred: Lymphoid tissue. Acceptable: Spleen, extranodal tissue. Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 1 cm(3)

**Additional Information:**
1. Advise Express Mail or equivalent if not on courier service.
2. Spleen tissue or extranodal tissue may be submitted when a lymphomatous disorder is believed to involve these tissues.

**Specimen Minimum Volume:** 0.5 cm(3)

**Transport Temperature:**

- Tissue Refrigerated (preferred)
- Ambient

**CPT Code Information:**
88239, 88291- Tissue culture for tumor, Interpretation and report; 88264 w/modifier 52-Chromosome analysis <20 cells (if appropriate); 88264-Chromosome analysis with 20 to 25 cells (if appropriate); 88264, 88285- Chromosome analysis with >25 cells (if appropriate); 88283-Additional specialized banding technique (if appropriate)

CRAT 35316

Chromosome Analysis, Rearrangement in Ataxia Telangiectasia, Blood

**Specimen Requirements:** Container/Tube: Green top (sodium heparin). Specimen Volume: 5 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

- Whole blood Ambient (preferred)
- Refrigerated

**CPT Code Information:**
88230, 88291-Tissue culture for lymphocytes. Interpretation and report; 88248 w/modifier 52-Chromosome analysis for breakage syndromes, score less than 50 cells (if appropriate); 88248-Chromosome analysis for breakage syndromes, score 50 to 100 cells (if appropriate); 88280-Chromosome analysis, greater than 2 karyotypes (if appropriate);

BLOOM 35317

Chromosome Analysis, Sister Chromatid Exchange (SCE) for Bloom Syndrome, Blood

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Green top (sodium heparin). Specimen Volume: 5 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Additional Information: 1. Advise Express Mail or equivalent if not on courier service. 2. If submitting with other cytogenetic studies, a minimum of 1 mL is required in addition to other volumes. Specimens will not be rejected if the volume is less than the minimum, but testing may not be possible depending on the amount received and other tests ordered.
**Specimen Minimum Volume:** If submitting with other cytogenetics studies, a minimum of 1 mL is required in addition to other volumes. Specimens will not be rejected if the volume is less than minimum, but testing may not be possible depending on the amount received and other tests ordered.

**Transport Temperature:**
Whole blood Ambient (preferred)
Refrigerated

**CPT Code Information:**
- 88230, 88291 - Tissue culture for Lymphocytes, Interpretation and report;
- 88245 w/modifier 52 - Chromosome analysis for breakage syndromes, less than 20 cells (if appropriate);
- 88245 - Chromosome analysis for breakage syndromes, 20-25 cells (if appropriate);
- 88245, 88285 - Chromosome analysis for breakage syndromes, more than 25 cells (if appropriate);
- 35250 - Chromosome Analysis, Skin Biopsy

**Chromosome Analysis, Skin Biopsy**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Sterile container with sterile RPMI transport media, Ringer's solution, or normal saline-RPMI transport media (T095-Petri dish is not needed for this test). Specimen Volume: 4 mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Additional Information: Advise Express Mail or equivalent if not on courier service.

**Specimen Minimum Volume:** 4-mm punch biopsy

**Transport Temperature:**
Tissue Refrigerated (preferred)
Ambient

**CPT Code Information:**
- 88233, 88291 - Tissue culture for skin/biopsy, Interpretation and report;
- 88262 w/modifier 52 - Chromosome analysis less than 15 cells (if appropriate);
- 88262 - Chromosome analysis with 15 to 120 cells (if appropriate);
- 88262, 88285 - Chromosome analysis with greater than 20 cells (if appropriate);
- 88280 - Chromosome analysis, greater than 2 karyotypes (if appropriate);
- 88283 - Additional specialized banding technique (if appropriate);
- 35320 - Chromosome Analysis, Solid Tumors

**Chromosome Analysis, Solid Tumors**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Include pathology reports, if available. Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 0.5-3 cm(3) or larger Additional Information: Advise Express Mail or equivalent if not on courier service.

**Specimen Minimum Volume:** 0.5 cm(3)

**Transport Temperature:**
Tissue Refrigerated (preferred)
Ambient
**CPT Code Information:** 88239, 88291 - Tissue culture for tumor, Interpretation and report; 88264 w/modifier 52-Chromosome analysis <20 cells (if appropriate); 88264-Chromosome analysis with 20 to 25 cells (if appropriate); 88264, 88285 - Chromosome analysis with >25 cells (if appropriate); 88283-Additional specialized banding technique (if appropriate); 88283

**CRHEP**

**113119**

**Chronic Hepatitis (Unknown Type)**

**Specimen Requirements:** Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 3 mL. Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 2.75 mL

**Transport Temperature:**
- Serum SST: Frozen (preferred) 30 days
- Refrigerated: 5 days

**CPT Code Information:** 86704; 86706; 86803; 87340; 87341 (if appropriate); 87522 (if appropriate); 87522

**CHSBP**

**9023**

**Chronic Hepatitis Profile (Type B)**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2.5 mL. Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum SST: Frozen (preferred) 30 days
- Refrigerated: 7 days
- Ambient: 24 hours

**CPT Code Information:** 86707; 87340; 87350; 87341 (if appropriate); 87522 (if appropriate); 87522

**CLLMV**

**65175**

**Chronic Lymphocytic Leukemia (CLL) Monitoring Minimal Residual Disease (MRD) Detection, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA Specimen Volume: 10 mL. Slides: Include 5- to 10-unstained blood smears, if possible. Collection Instructions: Do not transfer blood to other containers. Specimen Type: Bone Marrow Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA Specimen Volume: 1-5 mL. Slides: Include 5- to 10-unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens in not required. 2. Label specimen appropriately (bone marrow)

**Specimen Minimum Volume:** Blood: 4 mL. Bone Marrow: 1 mL

**Transport Temperature:**
- Blood: 4 mL
- Bone Marrow: 1 mL
CPT Code Information: 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 7-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); 88187-Flow Cytometry Interpretation, 2 to 8 markers;

Chronic Lymphocytic Leukemia (CLL), FISH

Specimen Requirements: Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

Specimen Minimum Volume: Blood: 2 mL/Bone Marrow: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€” DNA probe, each; each additional probe set (if appropriate); 88271x1 â€” DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€” DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€” DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€” Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€” Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Chub Mackerel, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
**Chyluria Screen**

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 15 mL Collection Instructions: 1. Collect a first-morning, random urine collection. 2. Patient should collect specimen prior to eating foods rich in vitamin C or taking vitamin C supplements. Additional Information: Indicate patient's age and sex.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
- Urine Frozen (preferred) 10 days
- Refrigerated 10 days

**CPT Code Information:** 82664-Electrophoretic technique, not elsewhere specified; 84311-SP, analyte not elsewhere specified; 84478-Triglycerides;

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**Chymopapain, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Chymotrypsin, Stool**

**Specimen Requirements:** Collect 1 gm random stool in sterile leak proof container, ship refrigerate. Note: Dietary restrictions: Patients receiving pancreatic enzymes should discontinue taking the enzymes at least 5 days before the collection of the stool sample.

**Specimen Minimum Volume:** 0.5 gram

**Transport Temperature:**
- Fecal Refrigerated (preferred) 14 days
- Frozen 30 days

**CPT Code Information:** 84311

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**Cinnamon IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Cinnamone, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86001

Circulating Immune Complexes (CIC)

**Specimen Requirements:** Draw blood in a plain, red-top tube(s) or a serum gel tube(s). Spin down and send 3 mL of serum refrigerated.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 14 days

**CPT Code Information:** 86003

Circulating Tumor Cells (CTC) for Breast Cancer by CellSearch, Blood

**Specimen Requirements:** Patient Preparation: Patients on doxorubicin (Adriamycin) must wait a minimum of 7 days after administration before blood is drawn for this test. Supplies: Circulating Tumor Cell Collection Kit (T630)-Required Ambient Mailer-Critical Specimens Only (T668) Container/Tube: CellSave tubes only Specimen Volume: Two 10-mL tubes Collection Instructions: 1. Collect whole blood in 2 CellSave preservative 10-mL tubes. 2. Collect a minimum of 7.5 mL of whole blood into each tube; tubes cannot be combined; each tube must contain at least 7.5 mL. 3. Immediately gently invert each tube 8 times. 4. Send specimen on same day of draw.

**Specimen Minimum Volume:** 7.5 mL

**Transport Temperature:**
- Whole blood Ambient 4 days

**CPT Code Information:** 86332
CPT Code Information: 86152-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); 86153-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); physician interpretation and report when required;

CTCCC
26176
Circulating Tumor Cells (CTC) for Colorectal Cancer by CellSearch, Blood

Specimen Requirements: Patient Preparation: Patients on doxorubicin (Adriamycin) must wait a minimum of 7 days after administration before blood can be drawn for this test. Supplies: Circulating Tumor Cell Collection Kit (T630)-Required Ambient Mailer-Critical Specimens Only (T668) Container/Tube: CellSave tubes only Specimen Volume: Two 10-mL tubes Collection Instructions: 1. Collect whole blood in 2 CellSave preservative 10-mL tubes. 2. Collect a minimum of 7.5 mL of whole blood into each tube; tubes cannot be combined; each tube must contain at least 7.5 mL. 3. Immediately gently invert each tube 8 times. 4. Send specimen on same day of draw.

Specimen Minimum Volume: 7.5 mL

Transport Temperature:
Whole blood Ambient 4 days

CPT Code Information: 86152-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); 86153-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); physician interpretation and report when required;

CTCPC
35325
Circulating Tumor Cells (CTC) for Prostate Cancer by CellSearch, Blood

Specimen Requirements: Patient Preparation: Patients on doxorubicin (Adriamycin) must wait a minimum of 7 days after administration before blood can be drawn for this test. Supplies: Circulating Tumor Cell Collection Kit (T630)-Required Ambient Mailer-Critical Specimens Only (T668) Container/Tube: CellSave tubes only Specimen Volume: Two 10-mL tubes Collection Instructions: 1. Collect whole blood in 2 CellSave preservative 10-mL tubes. 2. Collect a minimum of 7.5 mL of whole blood into each tube; tubes cannot be combined; each tube must contain at least 7.5 mL. 3. Immediately gently invert each tube 8 times. 4. Send specimen on same day of draw.

Specimen Minimum Volume: 7.5 mL

Transport Temperature:
Whole blood Ambient 4 days

CPT Code Information: 86152-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); 86153-Cell enumeration using immunologic selection and identification in fluid specimen (eg, circulating tumor cells in blood); physician interpretation and report when required;

CITAL
83730
Citalopram, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: Spin down within 2 hours of draw.
**CITR 9329**

**Citrate Excretion, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: Any drug that causes alkalemia or acidemia may be expected to alter citrate excretion and should be avoided, if possible. Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Add 30 mL of toluene as preservative at start of collection or refrigerate specimen during and after collection. 2. Collect urine for 24 hours. 3. Mix well before taking 4-mL aliquot. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 82507

**RCITR 84773**

**Citrate Excretion, Pediatric, Random, Urine**

**Specimen Requirements:** Patient Preparation: Any drug that causes alkalemia or acidemia may be expected to alter citrate excretion and should be avoided, if possible. Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: A timed 24-hour collection is the preferred specimen for measuring and interpreting this urinary analyte. Random collections normalized to urinary creatinine may be of some clinical use in patients who cannot collect a 24-hour specimen, typically small children. Therefore, this random test is offered for children <16 years old.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 82507

**FCAS 57807**

**Citric Acid, Serum**

**Specimen Requirements:** Submit only one of the following: Serum Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a sodium heparin (green top), PPT potassium EDTA (white top), or EDTA (lavender top) tube(s). Spin down and send 2 mL of plasma refrigerated in a plastic vial.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Varies Refrigerated (preferred) 18 days
Frozen 30 days

CPT Code Information: 82507

CKP53

CKP53 Protocol, Blood
Specimen Requirements: Only orderable as a reflex. For further information see test P53CA / Hematologic Neoplasms, TP53 Somatic Mutation, DNA Sequencing Exons 4-9.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Whole blood Ambient (preferred)
Refrigerated

CPT Code Information: 88184-Flow cytometry, first cell surface, cytoplasmic or nuclear marker; 88185 x 3-Each additional marker;

CLAD

Cladosporium, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

CLAM

Clam, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
CLAUD 70403

Claudin-1 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen 
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained 
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient 
(preferred) 
Refrigerated

FCLCN 75262

CLCN1 DNA Sequencing Test

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s) and send 8 mL of whole 
blood. Ship Ambient. Note: Collection date and informed consent are required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred) 10 days 
Refrigerated 10 days

FCLBZ 57709

Clobazam, Serum/Plasma

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a 
green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium 
heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube 
is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days 
Frozen 180 days 
Ambient 72 hours

CLOM 80902

Clomipramine, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection 
Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last 
dose). 2. Serum must be separated from cells within 2 hours of draw.
Specimen Minimum Volume: 0.25
Transport Temperature:
Serum Red Refrigerated (preferred) 28 days
  Frozen 28 days
  Ambient 7 days

CPT Code Information: 80335 ; G0480 (if appropriate);

CZPS
65044

Clonazepam and 7-Aminoclonazepam, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 1.2 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

Specimen Minimum Volume: 0.6 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
  Frozen 28 days
  Ambient 72 hours

CPT Code Information: 80346 and G0480 (if appropriate)

FCLON
91107

Clonidine (Catapres)

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 1.2 mL
Transport Temperature: Varies Refrigerated (preferred) 7 days
  Frozen 180 days
  Ambient 72 hours

CPT Code Information: 80375

CDIF
64354

Clostridioides (Clostridium) difficile Culture, Varies

Specimen Requirements: Submit only 1 of the following specimens: Preferred: Specimen Type: Preserved feces Supplies: C and S Vial (T058); Stool Collection Kit, Random (T635) Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S [T058]) Specimen Volume: Representative portion of feces; 5 mL Collection Instructions: Collect fresh feces and submit 1 g or 5 mL in container with transport medium. Additional Information: Only diarrheal (ie, unformed) feces should be tested. Testing formed feces for
Clostridioides (Clostridium) difficile is generally not clinically indicated. Specimen Stability Information: Ambient (preferred) 96 hours/Refrigerated 96 hours/Frozen 7 days Acceptable: Specimen Type: Unpreserved feces Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635) Container/Tube: Stool container (T288) Specimen Volume: Representative portion of feces Collection Instructions: Collect fresh feces and submit representative sample in stool container. Additional Information: Only diarrheal (ie, unformed) feces should be tested. Testing formed feces for C difficile is generally not clinically indicated. Specimen Stability Information: Ambient (preferred) 72 hours/Frozen 7 days Specimen Type: Fresh tissue or biopsy Sources: Colon Supplies: Anaerobe Transport Tube (T588) Specimen Volume: Entire collection, 1-2 cm(3) Collection Instructions: Aseptically collect a 1-2 cm(3) piece of tissue whenever possible. In general, a larger piece of tissue is preferred. Specimen Stability Information: Ambient 72 hours

**Specimen Minimum Volume:** Stool: 1 g or 5 mL Tissue: 5 mm(3)

**Transport Temperature:**
- Stool: Variance
- Tissue: Variance

**CPT Code Information:** 87081-C. difficile Culture; 87076-Anaerobe Ident (if appropriate); 87076-Id MALDI-TOF Mass Spec Anaerobe (if appropriate); 87153-Anaerobe Ident by Sequencing (if appropriate);

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**CDFRP 35149**

**Clostridioides (Clostridium) difficile Toxin, Molecular Detection, PCR, Feces**

**Specimen Requirements:** This test is validated for formed stool, although testing formed stool for Clostridioides (Clostridium) difficile is generally not clinically indicated. The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by C difficile Toxin DNA is unlikely. Submit only 1 of the following specimens: Preferred: Specimen Type: Preserved stool Supplies: C and S Vial (T058) Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of nonnutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S [T058]) Specimen Volume: Representative portion of stool; 5 mL Collection Instructions: Collect fresh stool and submit 1 gram or 5 mL in container with transport medium. Place stool in preservative within 2 hours of collection. Specimen Stability Information: Ambient (preferred) <7 days/ Refrigerated <7 days/ Frozen <7days Acceptable: Specimen Type: Unpreserved stool Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635) Container/Tube: Stool container (T288) Specimen Volume: Representative portion of stool Collection Instructions: Collect fresh stool and submit representative sample in stool container. Specimen Stability Information: Refrigerated (preferred) <7 days/ Frozen <7days

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Fecal: Variance 7 days

**CPT Code Information:** 87493

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**CLOV 82490**

**Clove, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**CLZ 42366**

**Clozapine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Additional Information: Therapeutic range (trough level) applies to specimens drawn immediately prior to next dose.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days
Ambient 14 days
 Frozen 14 days

**CPT Code Information:** 80159

**CLUS 70404**

**Clusterin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**CMET 70405**

**cMET Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
CMV by PCR

**Specimen Requirements:** 1 mL amniotic fluid shipped frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Amniotic Fld  Frozen 180 days

**CPT Code Information:** 87497

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CNBP DNA Test (DM2)

**Specimen Requirements:**
- **Specimen Type:** Whole Blood
- **Container/Tube:** Lavender top (EDTA)
- **Specimen Volume:** 8 mL
- **Collection Instructions:** Send 8 mL whole blood (lavender-top) EDTA tubes
- **Note:** Collection date is required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole blood  Ambient (preferred)  10 days
- Refrigerated  10 days

**CPT Code Information:** 81187; ;

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CNS Demyelinating Disease Evaluation, Serum

**Specimen Requirements:**
- **Patient Preparation:** For optimal antibody detection, we recommend blood drawing the specimen before initiation of immunosuppressant medication.
- **Container/Tube:**
  - Preferred: Red top
  - Acceptable: Serum gel
- **Specimen Volume:** 3 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum  Refrigerated (preferred)  28 days
- Frozen  28 days
- Ambient  72 hours

**CPT Code Information:** 86255 X2; 86256 X2 (if appropriate);

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Coagulation Factor II Activity Assay, Plasma

**Specimen Requirements:**
- **Specimen Type:** Platelet-poor plasma
- **Collection Container/Tube:** Light-blue top (citrate)
- **Submission Container/Tube:** Plastic vial
- **Specimen Volume:** 1 mL

**Collection Instructions:**
1. Spin down, remove plasma, and spin plasma again.
2. Freeze specimen immediately at < or =-40°C, if possible.

**Additional Information:**
1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.
2. Patient must not be receiving Coumadin or heparin therapy.
3. Each coagulation assay requested should have its own vial.
4. If priority specimen, mark request form, give reason, and request a call-back.
5. Coagulation testing is highly complex, often
requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85210

**F2IS**

**7805**

Coagulation Factor II Inhibitor Screen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally, < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

Specimen Minimum Volume: 2 mL in 2 plastic vials, 1 mL each

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85210-Factor II; 85335-Factor inhibitor; 85335-Bethesda units (if appropriate);

**F 9**

**9055**

Coagulation Factor IX Activity Assay, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Patient must not be receiving Coumadin or heparin therapy. 3. Each coagulation assay requested should have its own vial. 4. If priority specimen, mark request form, give reason, and request a call-back. 5. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85250

**FACTV**

**9054**

Coagulation Factor V Activity Assay, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for
Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Patient must not be receiving Coumadin or heparin therapy. 3. Each coagulation assay requested should have its own vial. 4. If priority specimen, mark request form, give reason, and request a call-back. 5. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85220

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F5IS 7807

Coagulation Factor V Inhibitor Screen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C, or, ideally < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85220-Factor V; 85335-Factor inhibitor; 85335-Bethesda units (if appropriate);

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F7 9055

Coagulation Factor VII Activity Assay, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Patient must not be receiving Coumadin or heparin therapy. 3. Each coagulation assay requested should have its own vial. 4. If priority specimen, mark request form, give reason, and request a call-back. 5. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days
Coagulation Factor VII Inhibitor Screen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C, or, ideally < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL in 2 plastic vials, 1 mL each

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85230-Factor VII; 85335-Factor inhibitor; 85335-Bethesda units (if appropriate);
Coagulation Factor X Activity Assay, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. If priority specimen, mark request form, give reason, and request a call-back. 4. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

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Coagulation Factor X Chromogenic Activity Assay, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally, < or =-40°C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. If priority specimen, mark request form, give reason, and request a call-back.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

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Coagulation Factor X Inhibitor Screen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Information: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL in 2 plastic vials, 1 mL each
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85260-Factor X; 85335-Factor inhibitor; 85335-Bethesda units (if appropriate);

Coagulation Factor XI Activity Assay, Plasma

Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Patient must not be receiving Coumadin or heparin therapy. 3. Each coagulation assay requested should have its own vial. 4. If priority specimen, mark request form, give reason, and request a call-back. 5. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85270

Coagulation Factor XI Inhibitor Screen, Plasma

Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

Specimen Minimum Volume: 2 mL in 2 plastic vials, 1 mL each
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85270-Factor XI; 85335-Factor inhibitor; 85335-Bethesda units (if appropriate);

Coagulation Factor XII Activity Assay, Plasma

accurate results as platelet contamination may cause spurious results. 2. Patient must not be receiving Coumadin or heparin therapy. 3. Each coagulation assay requested should have its own vial. 4. If priority specimen, mark request form, give reason, and request a call-back. 5. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85280

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**COU 80083 Cobalt, 24 Hour, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives—Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. 3. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days

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**CPT Code Information:** 83018

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**COWB 60355 Cobalt, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Collection Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 1 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Whole blood Refrigerated (preferred) 28 days

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CPT Code Information: 83018

CORU
60354

Cobalt, Random, Urine

Specimen Requirements: Collection Container/Tube: Clean, plastic urine collection container
Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Urine Refrigerated (preferred) 28 days
    Ambient 28 days
    Frozen 28 days

CPT Code Information: 83018

COS
80084

Cobalt, Serum

Specimen Requirements: Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (No Additive), 6 mL (T184) Metal Free Specimen Vial (T173) Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.6 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368380.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
    Ambient 28 days
    Frozen 28 days

CPT Code Information: 83018

COBCU
60353

Cobalt/Creatinine Ratio, Random, Urine

Specimen Requirements: Collection Container/Tube: Clean, plastic urine collection container
Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for
complete instructions. Additional Information: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 83018 Cobalt Concentration; 82570 Creatinine Concentration;

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**FCOKE 75174**

**Cocaine Analysis - Whole Blood**

**Specimen Requirements:** Draw blood in a purple-top (EDTA), green-top (sodium-heparin) or grey-top (NaF/oxalate) tube(s). Send 7 mL of whole blood refrigerated in a plastic vial.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole blood Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80307; 80353 â€“ if applicable;

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**COKMX 62720**

**Cocaine and Metabolite Confirmation, Chain of Custody, Meconium**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required. Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain of custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
Meconium Frozen (preferred) 21 days
Refrigerated 21 days
Ambient 72 hours

**CPT Code Information:** 80353; G0480 (if appropriate);

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**COKE 62719**

**Cocaine and Metabolite Confirmation, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the
legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 72 hours

**CPT Code Information:** 80353; G0480 (if appropriate);

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**COKEU**

**Cocaine and Metabolite Confirmation, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain of Custody Kit (T282) is available. For chain-of-custody testing, order COKEX / Cocaine and Metabolite Confirmation, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For more information, refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 72 hours

**CPT Code Information:** 80353; G0480 (if appropriate);

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**COKEM**

**Cocaine and Metabolites Confirmation, Meconium**

**Specimen Requirements:** Supplies: Stool container. Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
- Meconium Frozen (preferred) 21 days
  - Refrigerated 21 days
  - Ambient 72 hours

**CPT Code Information:** 80353; G0480 (if appropriate);
Coccidioides Antibody with Reflex, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.7 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86635

Coccidioides Antibody, Complement Fixation and Immunodiffusion, Serum

**Specimen Requirements:** This test is not orderable individually. It is reflexed when COXIS / Coccidioides Antibody with Reflex, Serum is positive.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86635 x 3

Coccidioides Antibody, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.8 mL

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86635 x 3

Coccidioides Antibody, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86635 x 3
Coccidioides immitis/posadasii, Molecular Detection, PCR

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Coccidioides species DNA is unlikely. Preferred Specimens: Body fluid, cerebrospinal fluid (CSF), ocular fluid, respiratory (e.g., bronchoalveolar lavage [BAL], bronchial washing, sputum), fresh tissue, or bone. Acceptable Specimens: If no fresh specimen is available, digested respiratory specimens treated with N-acetyl-L-cysteine (NALC)/NaOH are acceptable (e.g., bronchoalveolar lavage fluid, bronchial washing, respiratory fluid, sputum, or tracheal secretion). Submit only 1 of the following specimens:

- **Specimen Type:** Body fluid
- **Sources:** Body, ocular, or CSF
- **Container/Tube:** Sterile container
- **Specimen Volume:** 1 mL
- **Additional Information:** Only fresh, non-NALC/NaOH-digested body fluid is acceptable.

- **Specimen Type:** Respiratory Sources: BAL, bronchial washing, or sputum
- **Container/Tube:** Sterile container
- **Specimen Volume:** 1 mL if only PCR ordered or 3 mL if PCR ordered with smear and culture

- **Specimen Type:** Tissue Sources: Fresh tissue or bone
- **Container/Tube:** Sterile container
- **Specimen Volume:** 5-10 mm
- **Collection Instructions:** Keep moist with sterile water or sterile saline
- **Additional Information:** Only fresh, non-NALC/NaOH-digested tissue is acceptable. Acceptable Specimen Type: NALC/NaOH-digested respiratory specimens

- **Specimen Type:** NALC/NaOH-digested respiratory specimens
- **Sources:** Lavage fluid, bronchial washing, respiratory fluid, sputum, or tracheal secretion
- **Container/Tube:** Sterile container
- **Specimen Volume:** 2 mL
- **Collection Instructions:** 1. Submit digested specimen treated with NALC/NaOH. 2. Clearly indicate on container and order form that specimen is a digested specimen.

**Specimen Minimum Volume:**
- Body fluid: 0.5 mL
- Respiratory specimen nondigested: 0.5 mL
- Fresh tissue or bone: 5 mm
- NALC-NaOH-digested specimen: 1 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798

Coccidioides immitis/posadasii, Molecular Detection, PCR, Paraffin

**Specimen Requirements:** Specimen Type: Formalin-fixed, paraffin-embedded tissue
- **Sources:** Body tissue
- **Container/Tube:** Sterile container
- **Preferred:** Formalin-fixed, paraffin-embedded tissue (FFPE)
- **Acceptable:** Biopsy specimen of tissue fixed with formalin and embedded in a paraffin block
- **Specimen Volume:** 5 x 10 mm sections or 1 paraffin-embedded tissue block
- **Collection Instructions:** Block must be sent for sectioning.

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**
- Tissue, Paraffin Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87798

Cockatiel Droppings IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

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**Cockatiel Feathers IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

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**Cocklebur, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days

Frozen 90 days

**CPT Code Information:** 86003

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**Cockroach, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Coconut IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86003

Coconut, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Codfish, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
Coenzyme Q10, Reduced and Total, Plasma

**Specimen Requirements:** Patient Preparation: Fasting (8 hours) Collection Container/Tube: Green top (lithium or sodium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Immediately place specimen on wet ice. Maintain on wet ice and process within 3 hours of draw. 2. Centrifuge, separate plasma from cells, and immediately freeze specimen.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma Heparin Frozen (preferred) 14 days
- Refrigerated 8 hours

**CPT Code Information:** 82542

Coenzyme Q10, Total, Plasma

**Specimen Requirements:** Patient Preparation: Fasting (8 hours) Collection Container/Tube: Green top (lithium or sodium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Immediately place specimen on wet ice. Maintain on wet ice and process within 3 hours of draw. 2. Centrifuge, separate plasma from cells, and immediately freeze specimen.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma Heparin Frozen (preferred) 14 days
- Refrigerated 10 days

**CPT Code Information:** 82542

Coffee (Coffea spp) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

Cold Agglutinin Titer, Serum

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Aliquot tube Specimen Volume: 4 mL Pediatric Volume: 1 mL Collections Instructions: 1. Use a warm pack to keep specimen at $37^\circ C$ prior to and after collecting. 2. Allow specimens to clot at $37^\circ C$. 3. Centrifuge at $37^\circ C$ and separate serum from red cells immediately after blood clots, or within one hour of collection. 4. Do not refrigerate prior to separation of serum from red cells.
**Collagen IV (COL4) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC; ;

**Collagen Type II Antibodies**

**Specimen Requirements:** Container/Tube: Plain Red tube, SST tube is also acceptable. Specimen Volume: 3 mL Collection Instructions: Draw blood in a plain, red-top tube(s) or a serum-gel tube(s). Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 83520

**Collapsin Response-Mediator Protein-5-IgG (CRMP-5-IgG) Western Blot, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL Additional Information: Include name, phone number, mailing address, and E-mail address (if applicable) of ordering physician.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
Collapsin Response-Mediator Protein-5-IgG (CRMP-5-IgG)
Western Blot, Spinal Fluid

Specimen Requirements: Specimen Volume: 3 mL Collection Instructions: Send specimen refrigerated. Additional Information: Include name, phone number, mailing address, and E-mail address (if applicable) of ordering physician.

Specimen Minimum Volume: 2 mL

Transport Temperature:
CSF Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 84182

Combined Mitochondrial Analysis, Mitochondrial Full Genome and Nuclear Gene Panel

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Supplies: Fibroblast Biopsy Transport Media (T115) Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Supplies: Muscle Biopsy Kit (T541) Specimen Type: Tissue biopsy Collection Instructions: Prepare and transport specimen per instructions in Muscle Biopsy Specimen Preparation Sheet in Special Instructions. Additional Information: Muscle Biopsy Shipping Kits (T541) are available. Specimen Volume: 10-80 mg Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

Specimen Minimum Volume: Blood: 1 mL Tissue Biopsy: 200 mg

Transport Temperature:
Blood: Varies Tissue Biopsy: Varies

CPT Code Information: 81460-Whole Mitochondrial Genome; 81440-Nuclear Encoded Mitochondrial Genes; 81465 - Whole Mitochondrial Genome Large Deletion Analysis;
**CMIL 82833**

**Common Millet, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**REED 82902**

**Common Reed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CVID 87993**

**Common Variable Immunodeficiency Confirmation Flow Panel**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: < or =14 years: 4 mL >14 years: 10 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** < or =14 years: 3 mL >14 years: 5 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated 48 hours

**CPT Code Information:** 88184; 88185 x 2;

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**CO4D 70407**

**Complement 4d (C4d, Comp 4d) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Complement C1q, Serum

C1Q
8851

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: Fasting.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Ambient 21 days
Frozen 21 days

CPT Code Information: 86160

Complement C3, Serum

C3
8174

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 14 days
Ambient 72 hours

CPT Code Information: 86160

Complement C4, Serum

C4
8171

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 14 days
Ambient 72 hours

CPT Code Information: 86160
**AH50 Complement, Alternate Pathway (AH50), Functional, Serum**

**Specimen Requirements:** Patient Preparation: Patient should be fasting. Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Freeze specimen within 30 minutes.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Red
- Frozen 14 days

**CPT Code Information:** 86161

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**COM Complement, Total, Serum**

**Specimen Requirements:** Patient Preparation: Fasting preferred. Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red
- Frozen 14 days

**CPT Code Information:** 86162

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**AHUSP Complement-Mediated Atypical Hemolytic-Uremic Syndrome (aHUS)/Thrombotic Microangiopathy (TMA) Gene Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is
required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred) 1 year/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**
Varies Varies

**CPT Code Information:** 81479

### CCMGP

**Comprehensive Cardiomyopathy Multi-Gene Panel, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred)
Refrigerated

**CPT Code Information:** 81439

### G109

**Comprehensive CDG Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404; 81405 x4; 81406 x7; 81479;

### CMAMA

**Comprehensive Metabolic Panel, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated 24 hours

**CPT Code Information:** KS-84132; NAS-84295; CL-82435; HCO3-82374; AGAP-NA; BUN-84520; CRTS1-82565; CA-82310; GLURA-82947; TP-84155; ALB-82040; AST-84450; ALP-84075; ALT-84460; BILIT-82247;

### CAH2T

**Congenital Adrenal Hyperplasia (CAH) Newborn Screen, Blood Spot**
**Specimen Requirements:** Supplies: Card - Blood Spot Collection (Filter Paper) (T493)
Specimen Volume: 2
Blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. Do not expose specimen to heat or direct sunlight. 3. Do not stack wet specimens. 4. Keep specimen dry. 5. Let blood dry on the filter paper at ambient temperature in a horizontal position for a minimum of 3 hours. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood spot: 1

**Transport Temperature:**
Whole blood  Ambient (preferred)  90 days
Frozen  90 days
Refrigerated  90 days

**CPT Code Information:** 82542

**FFCAH**

**Congenital Adrenal Hyperplasia (CAH) Pediatric Profile 6, Comprehensive Screen**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red Specimen Volume: 3.5 mL
Collection Instructions: Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and separate within 1 hour of collection and send 3.5 mL of serum frozen in plastic vial.

**Specimen Minimum Volume:** 2 mL NOTE: Minimum volume does not allow for repeat analysis.

**Transport Temperature:**
Serum Red  Frozen 90 days

**CPT Code Information:** 82633/DOC; 82634/ 11-Desoxy cortisol; 82157/Androstenedione; 82533/Cortisol; 82626/DHEA; 84143/17-OH-Pregnenolone; 84144/Progesterone; 83498/17-OH-Progesterone; 84403/Testosterone;

**CAH21**

**Congenital Adrenal Hyperplasia (CAH) Profile for 21-Hydroxylase Deficiency**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.6 mL
Collection Instructions: 1. Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. 2. Include time of draw. Additional Information: If multiple specimens are drawn, send separate order for each specimen.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Red  Refrigerated (preferred) 14 days
Frozen  28 days
Ambient  7 days

**CPT Code Information:** 82157-Androstenedione; 82533-Cortisol; total; 83498-Hydroxyprogesterone, 17-d;
**Congenital Disorders of Glycosylation Genetic Panels by Next-Generation Sequencing (NGS)**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request; Eagle's minimum essential medium with 1% penicillin and streptomycin (T115). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

**Transport Temperature:**

- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81404; 81405 x 4; 81406 x 7; 81479; ; Fibroblast Culture for Genetic Test; 88233; 88240;

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**Congenital Dyserythropoietic Anemia Sequencing, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood (preferred) Container/Tube: Preferred: Lavender top (EDTA) or Yellow top (ACD) Acceptable: Green top (heparin) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Refrigerated < or =30 days Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL Specimen Volume: Entire specimen Collection Instructions: 1. Indicate volume and concentration of the DNA. 2. Label specimen as extracted DNA and source of specimen. Specimen Stability: Frozen/Refrigerated/Ambient < or =30 days

**Specimen Minimum Volume:** Blood: 1 mL; Extracted DNA: 100 mcL at 20 ng/mcL concentration

**Transport Temperature:**

- Varies

**CPT Code Information:** 81350-UGT1A1 (UDP glucuronosyltransferase 1 family, polypeptide A1) (eg, irinotecan metabolism), gene analysis, common variants (eg, *28, *36, *37); 81364-Molecular pathology procedure, Level 5 (eg, analysis of 2-5 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 6-10 exons, or characterization of a dynamic mutation disorder/triplet repeat by Southern blot analysis); 81479-Unlisted molecular pathology procedure;

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**Congenital Myasthenic Syndromes (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.
**Congenital Myopathy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404; 81406; 81407 x 4; 81408 x 2; 81479;

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**Congenital Neutropenia Primary Immunodeficiency (PID) Gene Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 5 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Please note that for patients with severe neutropenia, DNA yield may be insufficient for testing. Consider sending additional volume or an alternate specimen type. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: Please note that for patients with severe neutropenia, DNA yield may be insufficient for testing. Consider sending additional volume or an alternate specimen type. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**

Varies

**CPT Code Information:** 81406; 81408; 81479;

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**Congo Red Stain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.
Order MPCT / Muscle Pathology Consultation or MBCT / Muscle Biopsy Consultation, Outside Slides and/or Paraffin Blocks. The consultant will determine the need for special stains.

**Transport Temperature:**
Tissue Varies

**CPT Code Information:** 88314

**CTDC 83631**

**Connective Tissue Diseases Cascade, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days

Frozen 21 days

**CPT Code Information:** 86038; 86200; 83516-Centromere (if appropriate); 83516-Ribosome (if appropriate); 86225-ds-DNA Ab with Reflex (if appropriate); 86255-ds-DNA Ab by Crithidia IFA (if appropriate); 86235 x 6-RNP, Sm, SS-B, SS-A, Jo 1, and Scl 70 (if appropriate);

**COSPC 113326**

**Consult, Outside Slide (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient (preferred)

Refrigerated

**CPT Code Information:** 88321

**CRHPC 113329**

**Consult, w/Comp Rvw of His (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient (preferred)

Refrigerated

**CPT Code Information:** 88325

**CSPPC 113327**

**Consult, w/Slide Prep (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
CUPPC

**Consult, w/USS Prof (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88323-26

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CPAPD

**Conventional Smear-Diagnostic**

**Specimen Requirements:** Patient Preparation: For optimal interpretation, Papanicolaou smears should be collected near the middle of the menstrual cycle. No douching, lubricant use, or sexual intercourse for 24 hours prior to specimen collection. Container/Tube: Slide Specimen Volume: Circular scrape of cervical os Collection Instructions: 1. Specimen containers must be labeled with a minimum of 2 unique identifiers (patient's name, and medical record number or date of birth). Containers should also be labeled with specimen source, and date collected. 2. Glass slides may be labeled with a single unique identifier, but 2 identifiers are preferred. If multiple slides are submitted, each slide must have proper identification. Glass slides should be identified with the patient's name and a second patient identifier that is also on the accompanying paperwork (ie, medical record number or date of birth) 3. Fix slides immediately in 95% alcohol or treat with commercially available spray fixative.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** P3000; 88164; 88141-CVSPC (if appropriate);
**Copper, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of barium are known to interfere with this test. If barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert Submission Container/Tube: Plastic urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82525

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**Copper, Liver Tissue**

**Specimen Requirements:** Supplies: Metal Free Specimen Vial (T173) Container/Tube: Preferred: Mayo metal-free specimen vial (blue label) (T173) Acceptable: Paraffin block if no more than 1 or 2 cuts have been made to it for slides Specimen Volume: 2 mg Collection Instructions: 1. Two mg of liver tissue is required. This is typically a piece of tissue from a 22-gauge needle biopsy at least 2 cm long. If an 18-gauge needle is used, the tissue must be at least 1 cm in length. 2. Any specimen vial other than a Mayo metal-free vial used should be plastic, leached with 10% nitric acid for 2 days, rinsed with redistilled water, and dried in clean air. Additional Information: Paraffin blocks will be returned 3 days after analysis.

**Specimen Minimum Volume:** 2 cm (22-gauge needle), 1 cm (18-gauge needle), or 2 mm x 2 mm (punch) 0.3 mg by dry weight

**Transport Temperature:**
- Liver Tissue Refrigerated (preferred)
  - Ambient
  - Frozen

**CPT Code Information:** 82525
**Copper, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium, iodine, and barium are known to interfere with most metals tests. If gadolinium-, iodine, or barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: -Metal Free B-D Tube (No Additive), 6 mL (T184) -Metal Free Specimen Vial (T173) Collection Container/Tube: 6-mL Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 0.8 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82525

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**Copper/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of barium are known to interfere with most metals tests. If barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82525 Copper Concentration; 82570 Creatinine Concentration;

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**Coriander, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
**FCORG 57526**

**Corn IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86003

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**FCOR4 57569**

**Corn IgG4**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**CRNP 82718**

**Corn Pollen, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
**CORN 82705**

**Corn-Food, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CORTC 88221**

**Corticosterone, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: Morning (8 a.m.) specimen is preferred.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 14 days

**CPT Code Information:** 82528

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**CORTO 65484**

**Cortisol, Free and Total, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1.85 mL Collection Instructions: Morning (8 a.m.) specimens are preferred. The 8 a.m. cortisol can be referred to as the a.m. cortisol and can be drawn anywhere between 6 a.m. and 10:30 a.m. in the morning.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82530; 82533;

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**CORTU 8546**

**Cortisol, Free, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10-mL (T068) Submission Container/Tube: Plastic, urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 10 g of boric acid as preservative at start of collection. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Minimum Volume: 3 mL
Transport Temperature:
Urine Refrigerated (preferred) 14 days
  Frozen         28 days
  Ambient        7 days

CPT Code Information: 82530

CRANU
82920
Cortisol, Free, Random, Urine
Specimen Requirements: Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL
Collection Instructions: Collect a random urine specimen.

Specimen Minimum Volume: 3 mL
Transport Temperature:
Urine Frozen (preferred) 28 days
  Refrigerated      14 days
  Ambient           7 days

CPT Code Information: 82530

CORTF
65423
Cortisol, Free, Serum
Specimen Requirements: Container/Tube: Red top Preferred: Red top Specimen Volume: 1.25 mL
Collection Instructions: Morning (8 a.m.) specimens are preferred. The 8 a.m. cortisol can be referred to as the a.m. cortisol and can be drawn anywhere between 6 a.m. and 10:30 a.m. in the morning.

Specimen Minimum Volume: 0.75 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 28 days
  Ambient         28 days
  Frozen          28 days

CPT Code Information: 82530

CIVC
6347
Cortisol, Inferior Vena Cava, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 1.5 mL
Collection Instructions: Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. Additional Information: 1. Include time of draw. 2. If multiple specimens are drawn, send separate order for each specimen.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
  Ambient         28 days
Cortisol, Left Adrenal Vein, Serum

**Specimen Requirements:**
Container/Tube: Red top
Specimen Volume: 1.5 mL
Collection Instructions: Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. Additional Information: 1. Include time of draw. 2. If multiple specimens are drawn, send separate order for each specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

Cortisol, Right Adrenal Vein, Serum

**Specimen Requirements:**
Container/Tube: Red top
Specimen Volume: 1.5 mL
Collection Instructions: Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. Additional Information: 1. Include time of draw. 2. If multiple specimens are drawn, send separate order for each specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

Cortisol, Saliva

**Specimen Requirements:**
Patient Preparation: 1. Do not brush teeth before collecting specimen. 2. Do not eat or drink for 15 minutes prior to specimen collection. Supplies: Cortisol, Saliva Collection Kit (T514) Container/Tube: SARSTEDT Salivette (T514) Specimen Volume: 1.5 mL
Collection Instructions: 1. Collect specimen between 11 p.m. and midnight, and record collection time. 2. To use the Salivette: a. Remove top cap of container to expose swab. b. Place swab directly into mouth by tipping container so swab falls into mouth. Do not touch swab with fingers. c. Keep swab in mouth for approximately 2 minutes. Roll swab in mouth, do not chew swab. d. Place swab back into its container without touching, and replace the cap. 3. Record collection time, and send appropriately labeled Salivette to laboratory. Additional Information: 1. Reference values are also available for 8 a.m. (7 a.m.-9 a.m.) and 4 p.m. (3 p.m.-5 p.m.) collections, however, 11 p.m. to midnight collection is preferred. 2. Indicate collection time. 3. If multiple specimens are collected, submit each vial under a separate order.

**Specimen Minimum Volume:** 0.6 mL
Transport Temperature:
Saliva Refrigerated (preferred) 7 days
 Frozen 60 days
 Ambient 7 days

CPT Code Information: 82533

CORT
8545

Cortisol, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: 1. Include time of draw. 2. If multiple specimens are drawn, send separate order for each specimen.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 7 days
 Frozen 7 days

CPT Code Information: 82533

CINP
9369

Cortisol, Serum, LC-MS/MS
Specimen Requirements: Container/Tube: Red top Specimen Volume: 0.6 mL Collection Instructions: Morning (8 a.m.) and afternoon (4 p.m.) specimens are preferred. Additional Information: 1. Include time of draw. 2. If multiple specimens are drawn, send separate order for each specimen.
Specimen Minimum Volume: 0.25 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 28 days
 Ambient 28 days
 Frozen 28 days

CPT Code Information: 82533

COCOU
82948

Cortisol/Cortisone, Free, 24 Hour, Urine
Specimen Requirements: Supplies: Urine Tubes, 10-mL (T068) Submission Container/Tube: Plastic, urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 10 g of boric acid as preservative at start of collection. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.
Specimen Minimum Volume: 3 mL
Transport Temperature:
Urine Refrigerated (preferred) 14 days
**Cortisol/Cortisone, Free, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10 mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Frozen (preferred) 28 days
- Refrigerated 14 days
- Ambient 72 hours

**CPT Code Information:** 82530; 82542; 88903

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**Corynebacterium diphtheriae Culture**

**Specimen Requirements:** Specimen Type: Nasopharynx or throat Collection Container/Tube: Swab Submission Container/Tube: Modified Stuart transport device (T092 or T515) Specimen Volume: Entire specimen Additional Information: Specimen source is required.

**Transport Temperature:**
- Varies Ambient (preferred) 24 hours
- Refrigerated 24 hours

**CPT Code Information:** 87081-Corynebacterium diphtheriae culture; 87077-Identification by MALDI-TOF mass spec (if appropriate); 87077-Additional identification procedure (if appropriate); 87153-Aerobe identification by sequencing (if appropriate);

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**Cotton Fiber, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
Cottonseed, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Cottonwood, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Cow Epithelium, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

COX-2 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**Coxiella burnetii (Q fever), Molecular Detection, PCR**

Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Coxiella burnetii DNA is unlikely. Submit only 1 of the following specimens: Specimen Type: Fresh tissue or biopsy Sources: Lung, bone, liver, heart valve, aorta, or endocardium Container/Tube: Sterile container Specimen Volume: Entire collection or 5 mm³ Collection Instructions: Collect fresh tissue specimen. Specimen Stability Information: Refrigerated (preferred) <7 days/ Frozen <7 days Supplies: Tissue Block Container (T553) Specimen Type: Paraffin-embedded tissue block Sources: Lung, bone, liver, heart valve, aorta, or endocardium Container/Tube: Sterile container for cut sections or Tissue Block Container (T553) Specimen Volume: Submit formalin-fixed, paraffin-embedded tissue block to be cut and returned. Alternately, perform cuts and place two to five 10-micron sections in a sterile container for submission Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: Fresh tissue or biopsy: 5 mm³ Paraffin-embedded tissue block: two 10-micron sections

Transport Temperature: Varies

CPT Code Information: 87798

**Coxiella burnetii (Q fever), Molecular Detection, PCR, Blood**

Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Coxiella burnetii DNA is unlikely. Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred).

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Whole Blood EDTA Refrigerated (preferred) 7 days

Frozen 7 days

CPT Code Information: 87798

**Coxiella burnetii (Q Fever), Molecular Detection, PCR, Serum**

Specimen Requirements: Collection Container/Tube: Preferred: 5-mL red top Acceptable: Serum gel Submission Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: 1. Serum-gel tubes should be centrifuged and aliquoted within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Coxiella burnetii DNA is unlikely.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Frozen (preferred) 7 days
Refrigerated 7 days

CPT Code Information: 87798

CPOX Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL/Blood Spots: 3
Transport Temperature:
Varies Varies

CPT Code Information: 81405-CPOX; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

Crab IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com Page 314
**CRAB**

**CPT Code Information:** 86001

**Crab, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CRANB**

**Cranberry, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CRAY**

**Crayfish, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CRDPU**

**Creatine Disorders Panel, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 1 mL
Collection Instructions: 1. Collect a random urine specimen. 2. Immediately freeze specimen. 3. If possible, do not send other tests ordered on same vial of urine. In doing so, the other tests may have increased turnaround time due to the strict frozen criteria of this assay.

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Urine Frozen 29 days

**CPT Code Information:** 82540-Creatine; 82570-Creatinine; 82542-Guanidinoacetate;

### CK

**8336**  
**Creatine Kinase (CK), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top  
Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 28 days  
Ambient 48 hours

**CPT Code Information:** 82550

### CKELR

**35063**  
**Creatine Kinase Isoenzyme Reflex, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top  
Specimen Volume: 2 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.75 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 28 days

**CPT Code Information:** 82550-CK, total; 82552-CK isoenzymes (If appropriate);

### CRCL

**113357**  
**Creatinine Clearance, Serum and 24-Hour Urine**

**Specimen Requirements:** Both serum and urine are required. Serum must be drawn within the same 24-hour period as the urine collection. Specimen Type: Serum Container/Tube: Red top or serum gel  
Specimen Volume: 1 mL Collection Instructions: Label specimen as serum. Specimen Type: Urine Supplies: Aliquot Tube, 5 mL (T465)  
Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. Label specimen as urine. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** Serum: 0.5 mL; Urine 1 mL
**Transport Temperature:**
- Serum Refrigerated (preferred)
- Frozen
- Urine Refrigerated (preferred)
- Ambient
- Frozen

**CPT Code Information:** 82575

**Creatinine with Estimated GFR (CKD-EPI), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 82565

**Creatinine, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional Information: 1. This test does not require the use of a chemical preservative; if a chemical preservative is used, it must be added to the specimen within 4 hours of completion of 24-hour collection. 2. See the urine preservative collection options for acceptable preservatives when submitting specimen for multiple tests.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 82570

**Creatinine, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
**Body Fluid** Refrigerated (preferred) 7 days

Frozen 90 days

**CPT Code Information:** 82570

**RCTUR 83802 Creatinine, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL
Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 82570

**CRGSP 83659 Cryoglobulin and Cryofibrinogen Panel, Serum and Plasma**

**Specimen Requirements:** Both plasma and serum are required. Cryofibrinogen Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL
Collection Instructions: 1. Tube must remain at 37°C for 1/2 C. 2. Centrifuge at 37°C for 1/2 C. (Do not use a refrigerated centrifuge. If absolutely necessary, ambient temperature is acceptable.) It is very important that the specimen remain at 37°C until after separation of plasma from red cells. 3. Place plasma into an appropriately labeled plastic vial. Cryoglobulin Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 5 mL Collection Instructions: 1. Tube must remain at 37°C for 1/2 C. 2. Allow blood to clot at 37°C for 1/2 C. 3. Centrifuge at 37°C for 1/2 C. (Do not use a refrigerated centrifuge. If absolutely necessary, ambient temperature is acceptable.) It is very important that the specimen remain at 37°C until after separation of serum from red cells. 4. Place serum into an appropriately labeled plastic vial. Additional Information: Analysis cannot be performed with <3 mL of serum. Smaller volumes are insufficient to detect clinically important trace (mixed) cryoglobulins. Less than 3 mL will require draw of a new specimen.

**Specimen Minimum Volume:** Serum: 3 mL/Plasma: 0.5 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) Frozen
- Serum Refrigerated (preferred) Frozen

**CPT Code Information:** 82585-Cryofibrinogen; 82595-Cryoglobulin; 86334-Immunofixation (if appropriate);

**CRY_S 80988 Cryoglobulin, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic
vial Specimen Volume: 5 mL Collection Instructions: 1. Tube must remain at 37° C. 2. Allow blood to clot at 37° C. 3. Centrifuge at 37° C. (Do not use a refrigerated centrifuge. If absolutely necessary, ambient temperature is acceptable.) It is very important that the specimen remain at 37° C until after separation of serum from red cells. 4. Place serum into an appropriately labeled plastic vial. Additional Information: Analysis cannot be performed with <3 mL of serum. Smaller volumes are insufficient to detect clinically important trace (mixed) cryoglobulins. Less than 3 mL will require draw of a new specimen.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Serum Refrigerated (preferred)
- Frozen

**CPT Code Information:** 82595

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**SLFA 62075**

**Cryptococcus Antigen Screen with Titer, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top

- Specimen Volume: 1 mL

- **Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87899

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**CLFA 62074**

**Cryptococcus Antigen Screen with Titer, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial

- Specimen Volume: 1 mL

- **Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- CSF Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87899-Cryptococcus screen; 87899-Cryptococcus titer (if appropriate);

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**PLFA 42396**

**Cryptococcus Antigen Screen, Lateral Flow Assay, Pleural Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial

- Specimen Volume: 0.5 mL

- **Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Pleural Fluid Refrigerated (preferred) 21 days
**CPT Code Information:** 87899-Cryptococcus Ag Screen, LFA, PF; 87899-Cryptococcus Ag Titer, LFA, PF (if appropriate);

**PLFAT 48431**  
**Cryptococcus Antigen Titer, Lateral Flow Assay, Pleural Fluid**  
**Specimen Requirements:** Only orderable as a reflex. For more information see PLFA / Cryptococcus Antigen Screen, Lateral Flow Assay, Pleural Fluid.  
**Specimen Minimum Volume:** 0.25 mL  
**Transport Temperature:**  
Pleural Fluid Refrigerated (preferred) 21 days  
Frozen 30 days

**CPT Code Information:** 87899

**SLFAT 62077**  
**Cryptococcus Antigen Titer, LFA, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL  
**Specimen Minimum Volume:** 0.3 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
Frozen 14 days

**CPT Code Information:** 87899

**CLFAT 62076**  
**Cryptococcus Antigen Titer, LFA, Spinal Fluid**  
**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL  
**Specimen Minimum Volume:** 0.3 mL  
**Transport Temperature:**  
CSF Refrigerated (preferred) 14 days  
Frozen 14 days

**CPT Code Information:** 87899

**LFACX 62703**  
**Cryptococcus Antigen with Reflex, LFA, Spinal Fluid**  
**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**
Cryptococcus Antigen, Urine

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 0.5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87899

Cryptosporidium Antigen, Feces

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Preserved stool Supplies: Formalin - Meridian 10% Buffered Neutral (T466); Stool Collection Kit, Random (T635) Container/Tube: Preferred: Stool container with 10% buffered formalin preservative (T466) Acceptable: SAF (sodium acetate formalin) Specimen Volume: 5 g Specimen Stability Information: Ambient (preferred) 60 days Specimen Type: Unpreserved stool Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635) Container/Tube: Stool container (T288) Specimen Volume: 5 g Specimen Stability Information: Frozen 60 days

**Specimen Minimum Volume:** 1 g

**Transport Temperature:** Fecal Varies

**CPT Code Information:** 87328

Crystal Identification, Synovial Fluid

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Green top (heparin) Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Refrigerated (preferred)
  - Ambient 24 hours
- Frozen

**CPT Code Information:** 89060
CSF3R Exon 14 and 17 Mutation Detection by Sanger Sequencing, Varies

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: EDTA (lavender top) or ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability Information: Ambient (preferred)/Refrigerate Specimen Type: Bone marrow aspirate Container/Tube: EDTA (lavender top) or ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability Information: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of the DNA. Specimen Stability Information: Frozen (preferred)/Refrigerate/Ambient Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability Information: Ambient Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability: Ambient Specimen Type: Tissue Slides: Unstained slides Specimen Volume: 10 Slides Specimen Stability Information: Ambient

Specimen Minimum Volume: Blood, bone marrow: 1 mL Extracted DNA from blood or bone marrow: 50 microliters (mcL) at 20 ng/mcL

Transport Temperature:
Varies Varies 10 days

CPT Code Information: 81479 â€“ Unlisted molecular pathology procedure

CTRCZ Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: Blood: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81405

CU Index

Specimen Requirements: Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw 5 mL blood in a serum separator tube (SST) (plain, red-top tube is acceptable). Separate from cells within 2 hours of draw. Send 2 mL of serum refrigerated in a plastic vial. Note: 1) Patients taking calcineurin inhibitors should stop medication 72 hours prior to draw. 2) Patients taking prednisone should be off their medication for 2 weeks prior to draw.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 60 days
  - Ambient 7 days

**CPT Code Information:** 86352

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**CU Index Panel**

**FCUIP 57590**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Allow to clot; then spin down and separate. Submit 3 mL serum refrigerated in a plastic vial. Note: 1) Patients taking calcineurin inhibitors should stop medication 72 hours prior to draw. 2) Patients taking prednisone should be off their medication 2 weeks prior to draw.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
  - Ambient 7 days
  - Frozen

**CPT Code Information:** 84443; 86352; 86376; 86800;

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**Cucumber IgG**

**FCUKG 57651**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

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**Cucumber, IgE**

**CUKE 82861**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
**CPT Code Information:** 86003

**OATC 82916**

**Cultivated Oat, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**CRYE 82918**

**Cultivated Rye, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**WHTC 82915**

**Cultivated Wheat, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
Culture Referred for Identification, Fungus

**Specimen Requirements:** Specimen Type: Organism in pure culture Supplies: Infectious Container, Large (T146) Container/Tube: Preferred: Sabouraud dextrose agar slant Acceptable: Inhibitory mold agar slant Specimen Volume: Isolated mold or yeast Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:**

- 87107-Culture, fungi, definitive identification; 87106-Culture, fungi, definitive identification, each organism; yeast (if appropriate); 87106-Id MALDI-TOF Mass Spec Yeast (if appropriate); 87107-Id MALDI-TOF Mass Spec Fungi (if appropriate); 87107-Culture, fungi, definitive identification, each organism; mold (if appropriate); 87107-Fungal identification Panel A (if appropriate); 87107-Fungal identification Panel B (if appropriate); 87107-Yeast Identification Panel B (if appropriate); 87150-Identification rapid PCR coccidioides (if appropriate); 87150 x 2-Identification Histoplasma/Blastomyces, PCR (if appropriate); 87153-D2 fungal sequencing Identification (if appropriate);

Culture Referred for Identification, Mycobacterium and Nocardia

**Specimen Requirements:** Specimen Type: Organism in pure culture Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook (7H10 or 7H11) or Lowenstein-Jensen medium slant or in broth (eg, Mycobacteria Growth Indicator Tube [7H9] broth) Specimen Volume: Visible growth of isolate on solid media Isolate in broth media: > or =3 mL A minimum volume of 3 mL is recommended in order to perform all initial testing, this may include: stains, sub-culture media, nucleic acid probes, and any additional testing that may be required to determine the identification. If the broth sample volume is <3 mL, initial testing may be limited, and increased turnaround time is likely. Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:**

- Culture Referred for Identification, Mycobacterium; 87118-Identification of mycobacteria; 87158-Identification of mycobacteria by other methods (if appropriate); 87118-Id MALDI-TOF Mass Spec AFB (if appropriate); 87153-Mycobacteria Identification by Sequencing (if appropriate); 87150-Mycobacteria Probe Ident, Solid (if appropriate); 87150-Mycobacteria Probe Ident, Broth (if appropriate); 87150-Id, Mtb Speciation, PCR (if appropriate);

Culture Referred for Identification, Mycobacterium and Nocardia with Antimicrobial Susceptibility Testing

**Specimen Requirements:** Specimen Type: Organism in pure culture Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook (7H10 or 7H11) or Lowenstein-Jensen medium slant or in broth (eg, Mycobacteria Growth Indicator Tube [7H9] broth) Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing. Do not submit mixed cultures.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: Culture Referred for Identification, Mycobacterium; 87118-Identification of mycobacteria; 87158-Identification of mycobacteria by other methods (if appropriate) ; 87118-MALDI-TOF Mass Spec AFB (if appropriate); 87153-Mycobacteria Identification by Sequencing (if appropriate); 87150-Mycobacteria Probe Ident, Solid (if appropriate); 87150-Mycobacteria Probe Ident, Broth (if appropriate); 87150-Id, Mtb Speciation, PCR (if appropriate); 87186-Susceptibility Rapid Grower (if appropriate); 87186-Susceptibility Slow Grower (if appropriate); 87186-Susceptibility Nocardia species (if appropriate); 87188 x 3-Antimicrobial Susceptibility, Mycobacterium tuberculosis Complex, Broth Method (if appropriate); 87186-Susceptibility, Mtb Cx, 2nd Line (if appropriate); 87188-Susceptibility, Mycobacterium tuberculosis Complex, Pyrazinamide (if appropriate); 87153-Mtb PZA Confirmation, pncA Sequencing (if appropriate);

VRID2
5190

Culture Referred for Identification, Virus

Specimen Requirements: Supplies: Infectious Container, Large (T146) Specimen Type: Pure culture of organism from source cultured Container/Tube: Cell (viral) culture tube Specimen Volume: Entire specimen Collection Instructions: 1. Organism must be in pure culture, actively growing. 2. Completely fill culture tube with appropriate culture medium before shipment.

Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 87253-Additional Testing Virus Identification (if appropriate); 87254-Viral Smear, Shell Vial(if appropriate);

CURR
82498

Curry, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

CURL
82852

Curvularia lunata, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FCURV 57898**

**Curvularia spicifera/Bipolaris IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

**IRF4F 35278**

**Cutaneous Anaplastic Large Cell Lymphoma, 6p25.3 (DUSP22 or IRF4) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Lymph node Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5-micron thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide. Specimen Type: Solid tumor Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5-micron thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron thick sections placed on positively charged slides. Include 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25
Cutaneous Direct Immunofluorescence Assay (IFA), Biopsy

**Specimen Requirements:** Two or more biopsies from same site and sent in 1 specimen vial will be processed as 1 specimen. Two or more biopsies from different sites require separate specimen vials, however, they can be ordered together. Test performed on each site will be billed accordingly. Transport Medium Method Supplies: Michel's Transport Media for Immunofluorescent Testing on Tissue (T321) Specimen Type: Tissue Sources: Skin, oral (oropharyngeal), nasal, genital, esophagus, conjunctiva larynx, epiglottis, or bronchus mucosa Container/Tube: Transport medium (Michel's-T321, also called Zeus media) Specimen Volume: 2-8 mm punch specimen, intact or bisected; excisional biopsy specimen intact or bisected Collection Instructions: 1. Collect biopsy of uninvolved or involved skin. Refer to Recommended Biopsy Site Selection Based On Disease State below. 2. Immediately place specimen into a labeled vial of transport medium and seal tightly. Specimen Stability Information: Ambient (preferred) Snap-Frozen Method Specimen Type: Tissue Sources: Skin, oral (oropharyngeal), nasal, genital, esophagus, conjunctiva larynx, epiglottis, or bronchus mucosa Container/Tube: Plastic vial Specimen Volume: 2-8 mm punch specimen, intact or bisected; excisional biopsy specimen, intact or bisected Collection Instructions: 1. Collect biopsy of uninvolved or involved skin. Refer to Recommended Biopsy Site Selection Based On Disease State below. 2. Immediately place specimen into liquid nitrogen and allow to freeze thoroughly (do not allow specimen to desiccate). If liquid nitrogen is not available, specimen may be frozen by placing it on a small square of aluminum foil on a block of dry ice. Liquid nitrogen is preferred. 3. Immediately wrap specimen carefully in aluminum foil. At no time should the specimen be allowed to thaw. 4. Place the wrapped specimen into the prelabeled plastic vial and seal tightly. Recommended Biopsy Site Selection Based on Disease State 1. Pemphigus and pemphigoid groups (including linear IgA bullous dermatosis and chronic bullous disease of childhood): Biopsy erythematous perilesional skin or mucosa. Avoid erosions, ulcers, and bullae while obtaining tissue adjacent to active lesions. Label as perilesional skin. 2. Dermatitis herpetiformis: Biopsy normal-appearing skin, 0.5-1 cm away from lesion. Label as perilesional skin. 3. Lupus erythematosus: Involved areas of skin such as erythematous or active borders are preferred biopsy sites to confirm the diagnosis of lupus erythematosus, either discoid or systemic. Label as involved skin. Avoid ulcers, old lesions, and facial lesions, if possible. Uninvolved, nonexposed skin is the preferred site to detect a lupus band as may be found in systemic lupus erythematosus. Should unexposed skin be desired, buttock or medial thigh is suggested. Label as uninvolved, nonexposed skin. 4. Mixed connective tissue disease: Biopsy as for lupus erythematosus except when sclerodermoid features are present. For sclerodermoid features, biopsy inflamed area. Label as involved or uninvolved, exposed or nonexposed skin. 5. Vasculitis and urticaria: The erythematous or active border of a new lesion is preferred. Avoid old lesions and ulcers. Label as involved skin. If appropriate, skin lesion is not present, diagnosis may sometimes be made from uninvolved skin. 6. Porphyria cutanea tarda: Biopsy involved skin. Avoid old lesions and ulcers. Label as involved skin. 7. Lichen planus and lichenoid reactions: Biopsy involved skin. Avoid old lesions and ulcers. Label as involved skin.

**Specimen Minimum Volume:** Entire specimen

**Transport Temperature:**

- Frozen 120 days
- Refrigerated

**CPT Code Information:** Per biopsy site: 88346; 88350 x 4;
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 14 days

CPT Code Information: 88346; 88350;

CXCL13

CXCL13 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Specimen Minimum Volume: NA

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

CXCR4 Mutation Analysis, Somatic, Lymphoplasmacytic Lymphoma/Waldenstrom Macroglobulinemia

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Bone marrow aspirate Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of the DNA Specimen Stability Information: Frozen (preferred)/Refrigerated/Ambient Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability Information: Ambient Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability Information: Ambient

Specimen Minimum Volume: Blood, Bone Marrow: 1 mL Extracted DNA: at least 20 mcL with a concentration of at least 10 nanograms per mcL

Transport Temperature:
Varies Varies 10 days

CPT Code Information: 81479-Unlisted molecular pathology procedure
**FCYNB**  
**Cyanide, Blood Test**

**Specimen Requirements:** Container/Tube: Gray top (potassium oxalate/sodium fluoride)  
Specimen volume: 2 mL  
Collection instructions: Collect 2 mL whole blood in potassium oxalate/sodium fluoride Gray top tube, send frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
Whole Blood NaFl-KOx  
Frozen 90 days

**CPT Code Information:** 82600

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**CMP**  
**Cyclic AMP, Urinary Excretion**

**Specimen Requirements:** Both serum and urine are required. Serum must be drawn at time of urine collection. Specimen Type: Serum Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 1 mL  
Collection Instructions: Label specimen as serum. Specimen Type: Urine  
Supplies: Urine Container, 60 mL (T313) Specimen Volume: 14 mL  
Collection Instructions: 1. Collect a random urine specimen. 2. Label specimen as urine.

**Specimen Minimum Volume:** Serum: 0.5 mL Urine: 5.5 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 90 days  
Urine Frozen (preferred) 28 days  
Refrigerated 28 days

**CPT Code Information:** 82030

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**CCP**  
**Cyclic Citrullinated Peptide Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top  
Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 21 days  
Frozen 21 days

**CPT Code Information:** 86200

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**CYC1**  
**Cyclin D1 (CCND1, CYCD1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FFLEX 90085**

**Cyclobenzaprine (Flexeril)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Specimen Type: Plasma Container/Tube: Green Top Specimen Volume: 2 mL Collection Instructions: Draw blood in a green-top (sodium heparin) tube, plasma gel tube is not acceptable. Spin down and send 2 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Specimen Type: Serum Container/Tube: Red Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain, red-top tube, serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
- Frozen 30 days
- Ambient 72 hours

**CPT Code Information:** 80369

**CYCL 81506**

**Cyclospora Stain**

**Specimen Requirements:** Patient Preparation: Patient should avoid use of antidiarrheal medication (ie, loperamide or Pepto-Bismol). The presence of barium will interfere with this test. Supplies: ECOFIX Stool Transport Vial (Kit) (T219) Formalin-Meridian 10% Buffered Neutral (T466) Stool container, Small (Random), 4 oz (T288) Sodium Acetate Formalin (SAF) Stool Collection Kit, Random (T635) Submit only 1 of the following specimens: Preferred: Specimen Type: Preserved stool Preferred: ECOFIX Stool Transport Vial (Kit) (T219) Acceptable: 10% Buffered Formalin Stool Transport (Kit) (T466), Sodium Acetate Formalin (SAF) Specimen Volume: 10 g Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Unpreserved stool Container/Tube: Stool container (T288) Specimen Volume: 5 g Specimen Stability Information: Refrigerated 3 days (preferred)/Frozen

**Specimen Minimum Volume:** Preserved stool: 1 g; Unpreserved stool: 2 g

**Transport Temperature:**
Fecal Varies

**CPT Code Information:** 87015-Concentration; 87207-Stain;

**CYSPR 35143**

**Cyclosporine, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com Page 331
Collection Instructions: 1. Draw specimen immediately before a scheduled dose. 2. Do not centrifuge. 3. Send specimen in original tube. Additional Information: Therapeutic range applies to trough specimens drawn immediately prior to a.m. dose.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80158

**Cyclosporine, Peak, Blood**

**Specimen Requirements:**
- Container/Tube: Lavender top (EDTA)
- Specimen Volume: 3 mL

Collection Instructions: 1. Do not centrifuge. 2. Send specimen in original tube. Additional Information: No definitive therapeutic or toxic ranges have been established for this Peak testing.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80158

**CYP3A5 Genotype**

**Specimen Requirements:**
- Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood
- Container/Tube: Lavender top (EDTA)
- Specimen Volume: 3 mL

Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: One swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA
- Container/Tube: 2 mL screw top tube
- Specimen Volume: 100 mcL (microliters)

Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:**
- Blood: 0.4 mL
- Saliva: 1 swab

**Transport Temperature:**
- Varies

**CPT Code Information:** 81231-CYP3A5

**Cystatin C with Estimated GFR, Serum**
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Ambient 7 days
Frozen 7 days

CPT Code Information: 82610

Cystic Fibrosis Mutation Analysis, 106-Mutation Panel

Specimen Requirements: Additional Information: Patient education brochures in English (T548) and Spanish (T563) are available upon request. Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens:
Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: Amniotic fluid: 10 mL Blood: 0.5 mL Chorionic Villi: 5 mg Blood Spots: 5 punches, 3-mm diameter

Transport Temperature:
Varies

CPT Code Information: 81220-CFTR; ; Fibroblast Culture for Genetic Test; 88233-(if appropriate); 88240-(if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-(if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-(if appropriate);
Cysticercosis Antibody, IgG, Serum

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top Specimen
- Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86682

Cysticercus Antibody, ELISA (CSF)

**Specimen Requirements:**
- Specimen Type: Spinal Fluid
- Sources: CSF
- Container/Tube: Sterile container
- Specimen Volume: 1 mL
- Collection Instructions: Submit 1 mL of spinal fluid (CSF) in a sterile, plastic screw-cap vial. Refrigerate specimen after collection and ship at refrigerate temperature.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86682

Cystinuria Profile, Quantitative, 24 Hour, Urine

**Specimen Requirements:**
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 5 mL
- Collection Instructions:
  1. Collect before intravenous pyelogram.
  2. Collect urine for 24 hours.
  3. Add 20 mL of toluene as preservative at start of collection. If toluene is not available, refrigerate during collection.
  4. Mix well before taking 5-mL aliquot.
- Additional Information:
  1. 24-Hour volume is required.
  2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Frozen (preferred) 70 days
- Refrigerated 14 days

**CPT Code Information:** 82136

Cystinuria Profile, Quantitative, Random, Urine

**Specimen Requirements:**
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 2 mL
- Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 0.5 mL
**Transport Temperature:**

Urine Frozen (preferred) 70 days

Refrigerated 14 days

**CPT Code Information:** 82136

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**CYOXS**

**80873**

**Cytochrome Oxidase Stain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test. Order MPCT / Muscle Pathology Consultation or MBCT / Muscle Biopsy Consultation, Outside Slides and/or Paraffin Blocks. The consultant will determine the need for special stains.

**Transport Temperature:**

Tissue Varies

**CPT Code Information:** 88319

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**1A2V**

**97389**

**Cytochrome P450 1A2 Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Varies Varies

**CPT Code Information:** 0031U

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**2C19V**

**97390**

**Cytochrome P450 2C19 Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred...
volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Varies  

Varies

**CPT Code Information:** 81225

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**2C9GV**

**Cytochrome P450 2C9 Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Varies  

Varies

**CPT Code Information:** 81227

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**2D6CV**

**Cytochrome P450 2D6 (CYP2D6) Comprehensive Cascade**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Additional Information: Due to lower concentration of DNA yielded from saliva, testing cannot proceed to tier 2 sequencing and will stop after tier 1 testing is complete. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 75 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 1 mL Saliva: 1 swab

**Transport Temperature:**

Varies  

Varies

**CPT Code Information:** 81227
Cytochrome P450 3A4 Genotype

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood

Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: One swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Varies

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Cytokine Panel

**Specimen Requirements:** Submit only 1 of the following: Serum Draw blood in a plain, red-top tube(s), serum gel tube is acceptable. Spin down within 2 hours and send 1 mL of serum frozen in a plastic vial. Plasma Draw blood in a green-top (lithium-heparin) tube(s). Spin down within 2 hours and send 1 mL of plasma frozen in a plastic vial. Note: Critical frozen. Additional specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

Varies Frozen 365 days

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Cytology FNA (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies Ambient (preferred) Refrigerated

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Cytology Touch Prep (Bill Only)

**Transport Temperature:**

Varies
CTAPC
113341
Cytology Touch Prep Additional (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88333

CMVG
34970
Cytomegalovirus (CMV) Antibodies, IgG, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.4 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86644

CMVP
62067
Cytomegalovirus (CMV) Antibodies, IgM and IgG, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Aliquot tube Specimen Volume: 1 mL
Specimen Minimum Volume: 0.8 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86644-CMV, IgG; 86645-CMV, IgM

CMVM
34971
Cytomegalovirus (CMV) Antibodies, IgM, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Submission Container/Tube: Aliquot tube Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86645

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**CMVC8 88826**

**Cytomegalovirus (CMV) CD8 T-Cell Immune Competence, Quantitative Assessment by Flow Cytometry**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Timing and consistency in timing of blood collection is critical when serially monitoring patients for lymphocyte subsets. See data under Clinical Information. Supplies: Ambient Mailer-Critical Specimens Only (T668) Container/Tube: Green top (sodium heparin) Specimen Volume: 20 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 10 mL

**Transport Temperature:**
WB Sodium Heparin Ambient 48 hours

**CPT Code Information:** 88184-Flow Cytometry, cell surface, cytoplasmic, or nuclear marker, technical component only; first marker; 88185 x 2-Each additional marker;

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**CMVQN 601954**

**Cytomegalovirus (CMV) DNA Detection and Quantification by Real-Time PCR, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA plasma) Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube per manufacturer’s instructions. 2. Pour off plasma into aliquot tube.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 84 days
Refrigerated 6 days

**CPT Code Information:** 87497

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**FCYTO 58006**

**Cytomegalovirus (CMV) Genotypic Drug Resistance**

**Specimen Requirements:** Submit only 1 of the following specimens: Note: Label specimen with source. Plasma (Preferred) Specimen Type: Plasma Container/Tube: lavender-top EDTA tube or white top (EDTA PPT) tube Specimen Volume: 1 mL Specimen Stability: Frozen (preferred) 30 days-Refrigerated 8 days Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s) or white top (EDTA PPT) tube(s). Spin down within 2 hours and send 1 mL of EDTA plasma frozen in a plastic vial. Blood Specimen Type: Whole Blood Container/Tube: lavender-top EDTA tube Specimen Volume: 2-5 mL Specimen Stability: Frozen (preferred) 30 days-Refrigerated 8 days Collection Instructions:
Draw blood in a lavender-top (EDTA) tube(s), and send 2 - 5 mL of whole blood frozen. CSF Specimen Type: CSF Container/Tube: Sterile plastic container Specimen Volume: 1 mL Specimen Stability: Frozen 30 days Collection Instructions: Collect 1 mL in a sterile, plastic container and ship frozen. BAL Specimen Type: BAL Container/Tube: Sterile plastic container Specimen Volume: 1 mL Specimen Stability: Frozen (preferred) 30 days/Refrigerated 8 days Collection Instructions: Collect 1 mL in a sterile, plastic container and ship frozen.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Frozen 30 days

**CPT Code Information:** 87910

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**FCMIG 75226**

**Cytomegalovirus (CMV) IgG Avidity (AviDx), ELISA**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Serum gel tube is acceptable. Spin down and send 1 mL of serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 0.50 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86644

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**CMVI 70406**

**Cytomegalovirus (CMV) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**LCMV 81240**

**Cytomegalovirus (CMV), Molecular Detection, PCR**

**Specimen Requirements:** Submit only 1 of the following specimens: Supplies: Aliquot Tube, 5 mL (T465) Specimen Type: Fluid Sources: Spinal, pleural, peritoneal, ascites, pericardial, amniotic, or ocular Container/Tube: Preferred: 12 x 75-mm screw cap vial (T465) Acceptable: Sterile Container Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge. Supplies: Aliquot Tube, 5 mL (T465) Specimen Type: Fluid Sources: Respiratory; bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate Container/Tube: Preferred: 12 x 75-mm
screw cap vial (T465) Acceptable: Sterile container Specimen Volume: 1.5 mL Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Specimen Type: Swab Sources: Genital; cervix, vagina, urethra, anal/rectal, or other genital sources Container/Tube: multimicrobe media (M4-RT) (T605) Collection Instructions: Place swab back into multimicrobe media (M4-RT, M4, or M5) Supplies: Culturette (BBL Culture Swab) (T092) M4-RT Media (T605) Specimen Type: Swab Sources: Miscellaneous; dermal, eye, nasal, saliva, or throat Container/Tube: multimicrobe media (M4-RT) (T605) Collection Instructions: Place swab back into multimicrobe media (M4-RT, M4, or M5) Supplies: M4-RT (T605) Specimen Type: Tissue Sources: Brain, colon, kidney, liver, lung, etc. Container/Tube: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT [T605], M4, or M5) Specimen Volume: Entire collection Collection Instructions: Submit only fresh tissue in multimicrobe media (M4-RT) (T605) or a sterile container with 1 to 2 mL sterile saline Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Collect a random urine specimen. Specimen Type: Bone marrow Container/Tube: Lavender top (EDTA) Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** Body Fluid, Ocular Fluid, Spinal Fluid, or Urine: 0.3 mL Respiratory Specimens: 1 mL Tissue: 2 x 2-mm biopsy

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87496

### ANCA

**Cytoplasmic Neutrophil Antibodies, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.8 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86255; 86256 (if appropriate);

### DIRM

**D-Dimer, Plasma**

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85379

### DDITT

**D-Dimer, Plasma**

**Specimen Requirements:** Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down, remove plasma and spin plasma again. Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

**Specimen Minimum Volume:** 0.5 mL
Transport Temperature:
Plasma Na Cit Frozen (preferred) 90 days
Ambient 4 hours

CPT Code Information: 85379

D-Lactate, Plasma
Specimen Requirements: Collection Container/Tube: Grey top (potassium oxalate/sodium fluoride) (T275) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and immediately freeze specimen. Additional Information: For L-lactate (lactic acid), order LLA / Lactate, Plasma.
Specimen Minimum Volume: 0.55 mL
Transport Temperature:
Plasma NaFl-KOx Frozen (preferred) 365 days
Ambient 7 days
Refrigerated 7 days

CPT Code Information: 83605

D-Lactate, Urine
Specimen Requirements: Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 2.5 mL Collection Instructions: 1. Collect a timed or random urine specimen. 2. No preservative. 3. Immediately freeze specimen.
Specimen Minimum Volume: 0.65 mL
Transport Temperature:
Urine Frozen (preferred) 365 days
Refrigerated 7 days
Ambient 72 hours

CPT Code Information: 83605

Dairy and Grain Allergen Profile
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
**Dandelion, IgE**

**Specimen Requirements:**
Container/Tube: Preferred: Red top
Acceptable: Serum gel
Specimen Volume: 0.5 mL for each 5 allergens requested
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:**
For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Dantrolene, Serum/Plasma**

**Specimen Requirements:**
Submit only 1 of the following specimens: Serum Collection
Container/Tube: Red-top tube Submission Container/Tube: (T192) Amber plastic transport tube
Specimen Volume: 1 mL
Collection Instructions: Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum frozen in an amber (T192) plastic transport tube to protect from light. Note: Label specimen appropriately (serum). Plasma Collection
Container/Tube: Lavender-top (EDTA) Submission Container/Tube: (T192) Amber plastic transport tube
Specimen Volume: 1 mL
Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). (Plasma gel tube is not acceptable.) Spin down and send 1 mL of EDTA plasma frozen in an amber (T192) plastic transport tube to protect from light. Note: Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Frozen 7 days

**CPT Code Information:** 80369

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**Date, Fruit, IgE**

**Specimen Requirements:**
Container/Tube: Preferred: Red top
Acceptable: Serum gel
Specimen Volume: 0.5 mL for each 5 allergens requested
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:**
For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003
**DATRE 82481**

**Date, Tree, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**DEEP 82144**

**Deer Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**DHEA_81405**

**Dehydroepiandrosterone (DHEA), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.45 mL

**Transport Temperature:**
- Serum Frozen (preferred) 28 days
- Refrigerated 21 days
- Ambient 6 hours

**CPT Code Information:** 82626

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**DHES1 113595**

**Dehydroepiandrosterone Sulfate (DHEA-S), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 30 days

CPT Code Information: 82627

DMS1

Dementia, Autoimmune Evaluation, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 4 mL

Specimen Minimum Volume: 2 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKC autoantibody; 83519-N-type calcium channel antibody; 83519-P/Q-type calcium channel antibody; 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-2; 86255-PCA-Tr; 86255-AMPAR-Ab; 86255-GABAR-Ab; 86255-NMDAR-Ab; 86341-GAD65; 86255-LG1CS; 86255-CS2CC; 86255-PCA-1 (if appropriate); 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5 Western blot confirmation (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86256-AMPAR-Ab titer (if appropriate); 86256-GABAR-Ab titer (if appropriate); 86256-NMDAR-Ab titer (if appropriate); 86256-NMO/AQP4-IgG FACS titer (if appropriate);

DMC1

Dementia, Autoimmune Evaluation, Spinal Fluid

Specimen Requirements: Container/Tube: Sterile vial Specimen Volume: 4 mL

Specimen Minimum Volume: 2 mL

Transport Temperature:
CSF Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 83519-Neuronal VGKC autoantibody; 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-2; 86255-PCA-Tr; 86255-AMPAR-Ab; 86255-GABAR-Ab; 86255-NMDAR-Ab; 86341-GAD65; 86255-LG1CS; 86255-CS2CC; 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5 Western blot confirmation (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86256-AMPAR-Ab titer (if appropriate); 86256-GABAR-Ab titer (if appropriate); 86256-NMDAR-Ab titer (if appropriate); 86256-NMO/AQP4-IgG FACS titer (if appropriate);

DENGM

Dengue Virus Antibody, IgG and IgM, Serum
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 14 days

**CPT Code Information:** IgM: 86790; IgG: 86790;

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### Dengue Virus Antibody/Antigen Panel, Serum

**DENV**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 14 days

**CPT Code Information:** IgG: 86790; IgM: 86790; NS1: 86790;
**CPT Code Information:** 8177-ATN1 (ataxin 2) (eg, denatorubral-pallidolyysian atrophy) gene analysis, evaluation to detect abnormal (eg, expanded) alleles; ;

**FDCU 58048**

**Deoxypyridinoline Crosslinks, Urine**

**Specimen Requirements:** Transfer 3.5 mL aliquot from well-mixed first morning urine collection, no preservatives, shipped frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Frozen (preferred) 90 days
- Refrigerated 7 days

**CPT Code Information:** 82523

**DMIC 82828**

**Dermatophagoides microceras, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**DEXT 70596**

**DermPath Consultation, Wet Tissue**

**Specimen Requirements:** Supplies: Dermatopathology Media (T101) Sources: Skin or oral mucosa Container/Tube: Regular serum vials with 10% formalin (T101) Specimen Volume: Entire specimen Collection Instructions: For scalp biopsies when the differential diagnosis includes a scarring alopecia, 2 separate 4-mm punch biopsies are recommended (1 for vertical and 1 for horizontal sections). If a single scalp biopsy is received with the clinical diagnosis of a scarring alopecia, the specimen will be processed with horizontal sections.

**Specimen Minimum Volume:** Size needed depends on diagnosis and size of lesion.

**Transport Temperature:**
- Tissue Ambient

**CPT Code Information:** Level II Surg Path Gross and Micro Exam; 88302 (if appropriate); ;
- Level III Surg Path; 88304 (if appropriate); ; Level IV Surg Path; 88305 (if appropriate);

**DCP 61844**

**Des-Gamma-Carboxy Prothrombin (DCP), Serum**
Specimen Requirements: Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
  Serum Frozen (preferred) 90 days
  Refrigerated 7 days

CPT Code Information: 83951

Desipramine, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
  Serum Red Refrigerated (preferred) 28 days
  Frozen 28 days
  Ambient 7 days

CPT Code Information: 80335; G0480 (if appropriate);

Desmin Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
  TECHONLY Ambient (preferred)
  Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Desmoglein 1 (DSG1) and Desmoglein 3 (DSG3), IgG Antibodies, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
  Serum Refrigerated (preferred) 14 days
  Frozen 30 days
**Ambient** 14 days

**CPT Code Information:** 83516 x 2

**DESG3**

Desmoglein 3 (DSG3) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**DSRCT**

Desmoplastic Small Round-Cell Tumor by Reverse Transcriptase PCR (RT-PCR)

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue with a minimum of 5% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 5% tumor cell population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81401-EWSR1/WT1 (t(11;22)) (eg, Ewing sarcoma/peripheral neuroectodermal tumor), translocation analysis, qualitative, and quantitative, if performed; 88381-Microdissection, manual;

**FDXM**

Dexamethasone

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Spin down and send 3 mL of serum frozen in a plastic vial. Note: Serum gel tube is acceptable, but must pour off into a plastic vial.

**Specimen Minimum Volume:** Pediatric minimum: 1 mL Note: Does not allow for repeat analysis.

**Transport Temperature:**
- Serum Frozen (preferred) 365 days
Refrigerated  14 days  
Ambient  6 days

**CPT Code Information:** 80375

**FDXAP 57720**

**Dexedrine (Dextroamphetamine)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen  180 days

**CPT Code Information:** 80324

**FDM 90117**

**Dextromethorphan (DM), Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen  180 days

**CPT Code Information:** 80362

**DBS1 48400**

**Diabetes Mellitus Type 1 Evaluation, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen  28 days
  - Ambient  72 hours

**CPT Code Information:** 86337-Insulin antibodies; 86341 x3-Islet cell antibody;
DIA
8629

Diazepam and Nordiazepam, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80346; G0480 (if appropriate);

FDGTX
75374

Digitoxin, Serum

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerated in a plastic, preservative-free vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 80375

FRDIG
82130

Digoxin, Free, Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw blood 6 to 8 hours after last dose of digoxin. 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 180 days

**CPT Code Information:** 80163

DIG
8674

Digoxin, Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw blood 6 to 8 hours after the last dose of digoxin. 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 180 days

**CPT Code Information:** 80162

**Dihydropyrimidine Dehydrogenase (DPYD) Full Gene Sequencing**

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens:
- **Specimen Type:** Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL
  - Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated
- **Specimen Type:** Saliva Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions. Specimen Stability Information: Ambient
- **Specimen Type:** DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.45 mL  Saliva: Full tube of saliva

**Transport Temperature:**
- Varies

**CPT Code Information:** 81232

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**Dihydropyrimidine Dehydrogenase (DPYD) Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens:
- **Specimen Type:** Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL
  - Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated
- **Specimen Type:** Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit (T786: fees apply) Specimen Volume: 1 swab
  - Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient
- **Specimen Type:** DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters)
  - Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL  Saliva: 1 swab

**Transport Temperature:**
- Varies

**CPT Code Information:** 81232
DHRF 62766

Dihydrorhodamine (DHR) Flow Cytometric N-Formyl-Methionyl-Leucyl-Phenylalanine (fMLP) Test, Blood

Specimen Requirements: Both a whole blood sodium heparin specimen and a whole blood sodium heparin control specimen from an unrelated, healthy donor are required. Supplies: Ambient Mailer-Critical Specimens Only (T668) Patient: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Normal Control: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated person within an hour of the patient. 2. Label clearly on outermost label normal control. 3. Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature: WB Sodium Heparin Ambient 48 hours

CPT Code Information: 82657; 88184;

DHRP 62765

Dihydrorhodamine (DHR) Flow Cytometric Phorbol Myristate Acetate (PMA) Test, Blood

Specimen Requirements: Both a whole blood sodium heparin specimen and a whole blood sodium heparin control specimen from an unrelated, healthy donor are required. Supplies: Ambient Mailer-Critical Specimens Only (T668) Patient: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Normal Control: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated person within an hour of the patient. 2. Label clearly on outermost label normal control. 3. Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature: WB Sodium Heparin Ambient 48 hours

CPT Code Information: 82657; 88184;

DHR 62764

Dihydrorhodamine (DHR) Flow Cytometric Test, Blood

Specimen Requirements: Both a whole blood sodium heparin specimen and a whole blood sodium heparin control specimen from an unrelated, healthy donor are required. Supplies: Ambient Mailer-Critical Specimens Only (T668) Patient: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Normal Control: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated person within an hour of the patient. 2. Label clearly on outermost label normal control. 3. Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature: WB Sodium Heparin Ambient 48 hours

CPT Code Information: 82657; 88184;
**DHTS 81479**

**Dihydrotestosterone, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Red top Acceptable: Serum gel
- **Volume:** 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 82642; G0480 (if appropriate);

**DCMGP 63159**

**Dilated Cardiomyopathy Multi-Gene Panel, Blood**

**Specimen Requirements:**
- **Container/Tube:** Lavender top (EDTA)
- **Volume:** 3 mL

**Collection Instructions:** Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred)
- Refrigerated

**CPT Code Information:** 81439

**DILL 82602**

**Dill, IgE**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Red top Acceptable: Serum gel
- **Volume:** 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FDILT 91118**

**Diltiazem (Cardizem, Dilacor)**

**Specimen Requirements:** Submit only 1 of the following specimens:
- **Plasma** Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial.
- **Serum** Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.
**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80375

**CDRVT 63681**

**Dilute Russell Viper Venom Time (DRVVT) Confirmation Ratio**

**Specimen Requirements:** Only orderable as part of a reflex. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Specimen Minimum Volume:** Only orderable as part of a reflex. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85613

**DRVTK 37019**

**Dilute Russell Viper Venom Time (DRVVT) Interpretation**

**Specimen Requirements:** Only orderable as a part of a profile. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**DRVTJ 63679**

**Dilute Russell Viper Venom Time (DRVVT) Mix and Confirm Reflexes, Plasma**

**Specimen Requirements:** Only orderable as a part of a reflex. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**MDRVT 63680**

**Dilute Russell Viper Venom Time (DRVVT) Mix Ratio**

**Specimen Requirements:** Only orderable as part of a reflex. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Specimen Minimum Volume:** Only orderable as part of a reflex. For more information see DRVTI / Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma.

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com
CPT Code Information: 85613

**DRVTI 63678**

**Dilute Russell Viper Venom Time (DRVVT), with Reflex, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at or below -40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

CPT Code Information: 85613-DRVVT; 85613-DRVVT mix (if appropriate); 85613-DRVVT confirmation (if appropriate); ;

**DRVT 80340**

**Dilute Russells Viper Venom Time (DRVVT), Plasma**

**Specimen Requirements:** Only orderable as part of a profile. For more information see LUPPR / Lupus Anticoagulant Profile, THRMP / Thrombophilia Profile, or PROCT / Prolonged Clot Time Profile.

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

CPT Code Information: 85613

**DIPGS 36664**

**Diphtheria Toxoid IgG Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 30 days

Frozen 30 days

CPT Code Information: 86317

**DTABS 36670**

**Diphtheria/Tetanus Antibody Panel, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL
### Dipyridamole, Serum/Plasma

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube(s) is not acceptable.) Spin down and send 2 mL of serum refrigerate in plastic preservative-free vial. Plasma Draw blood in a lavender-top (EDTA), or a Pink top tube(s). (Plasma gel tube(s) is not acceptable.) Spin down and send 2 mL of EDTA plasma refrigerate in plastic preservative-free vial.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Refrigerated (preferred) 30 days
- Frozen 30 days
- Ambient 14 days
- Refrigerated 48 hours
- Frozen 240 days

**CPT Code Information:** 86317 x 2

### Direct Antiglobulin Test (Polyspecific), Blood

**Specimen Requirements:** Container/Tube: Pink top (EDTA) Specimen Volume: 6 mL

**Specimen Minimum Volume:** 3 mL Neonates: EDTA Micro tube 0.5 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred) 48 hours
- Refrigerated 48 hours

**CPT Code Information:** 80375

### Disaccharidase Analysis

**Specimen Requirements:** Send 5 mg from an intestinal biopsy in a clean, screw-topped plastic vial. Freeze immediately after collection and ship frozen. Note: Specimen should not be placed on gauze, filter paper, nor should any saline, support or embedding material be added.

**Specimen Minimum Volume:** 5 mg wet weight

**Transport Temperature:**
- Tissue Frozen

**CPT Code Information:** 82657

### Disaccharidase Panel

**CPT Code Information:** 82657
**Specimen Requirements:** Send 2.0 - 5.0 mg wet weight, from a small bowel biopsy in a clean, plastic specimen tube. Avoid contamination with traces of the fixative used for surgical pathology biopsies. (Do not send in saline.) Freeze immediately after collection and ship frozen. Note: Tube size should be no more than 15cc to help prevent sample from drying out during transportation.

**Specimen Minimum Volume:** 2.0 mg

**Transport Temperature:**

Tissue Frozen

**CPT Code Information:** 82657

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**Distal Myopathy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404 x 2; 81405 x 2; 81406 x 4; 81407; 81408 x 2; 81479; 81444

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**Distal Weakness Expanded Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81325; 81403; 81404 x 13; 81405 x 21; 81406 x 24; 81407 x 5; 81408 x 4; 81479; 81444

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**Diuretic Screen, Urine**

**Specimen Requirements:** 10 mL aliquot of random or spot urine collected without preservative in a plastic container. Send specimen refrigerated.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80377

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**DMPK DNA Test (DM1)**

**Specimen Requirements:** Specimen Type: Whole Blood Container/Tube; Lavender top (EDTA) Specimen volume: 8 mL Collection instructions: Send 8 mL whole blood (lavender-top) EDTA tubes Note: Collection date is required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**

Whole Blood EDTA Ambient (preferred) 10 days

Refrigerated 10 days
**DNA Analysis, Blood**

**Specimen Requirements:** This is a miscellaneous test. Client must indicate specific analysis required. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Specimens preferred to arrive within 96 hours of draw.

**Transport Temperature:**
- Varies Ambient
  - (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81234

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**DNA Double-Stranded (dsDNA) Antibodies by Crithidia luciliae IFA, IgG, Serum**

**Specimen Requirements:** Only orderable as reflex. For more information see ADNAR / DNA Double-Stranded (dsDNA) Antibodies with Reflex, IgG, Serum.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 81479

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**DNA Double-Stranded (dsDNA) Antibodies with Reflex, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86225; 86225-CRITH (if appropriate)

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**DNA Double-Stranded (dsDNA) Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 8178

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Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86225

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**DNJB9**

71739

**DNAJB9 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**FDKYE**

57528

**Dock Yellow (Rumex crispus) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

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**DOGD**

60108

**Dog Dander, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days
**CPT Code Information:** 86003

**DOG1 70422**

**DOG-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FDLS 58007**

**Donath Landsteiner**

**Specimen Requirements:** Draw blood in a plain red-top tube. Maintain specimen at 37°C until serum is separated from cells. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**

- Serum Red Refrigerated (preferred) 7 days
- Ambient 72 hours

**CPT Code Information:** 86940, 86941

**DRD3O 60342**

**Dopamine Receptor D3 Genotype, Saliva**

**Specimen Requirements:** Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Supplies: DNA Saliva Collection Kit (T651) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Saliva Ambient

**CPT Code Information:** 81479

**DRD3 81776**

**Dopamine Receptor D3 Genotype, Whole Blood**

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen
Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Whole Blood EDTA Ambient
(preferred)
Refrigerated

CPT Code Information: 81479

Dopamine Receptor D4 Genotype (DRD4), Blood

Specimen Requirements: Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Whole Blood EDTA Ambient
(preferred)
Refrigerated

Specimen Requirements: Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Supplies: DNA Saliva Collection Kit (T651) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

Specimen Minimum Volume: 1 mL
Transport Temperature:
Saliva Ambient

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Doxepin and Nordoxepin, Serum

**DXPIN 63507**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (or at a minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum: Red Refrigerated (preferred) 28 days
- Frozen: 28 days
- Ambient: 7 days

**CPT Code Information:** 86003

Drug Abuse Panel with Confirmation, Chain of Custody, Urine

**CDAUX 62718**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required Specimen Volume: 30 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 14 days
  - Frozen: 14 days
  - Ambient: 72 hours

**CPT Code Information:** 80335; G0480 (if appropriate);

Drug Abuse Survey with Confirmation, Panel 5, Chain of Custody, Urine

**CDA5X 62715**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required Specimen Volume: 30 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 14 days

**CPT Code Information:** 80307
CPT Code Information: 80307

**CDAU5 80373**

**Drug Abuse Survey with Confirmation, Panel 5, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 30 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 30 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order CDA5X / Drug Abuse Survey with Confirmation, Panel 5, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307; See individual reflex tests for appropriate CPT codes;

**CDA7X 62716**

**Drug Abuse Survey with Confirmation, Panel 9, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required Specimen Volume: 30 mL Collection Instructions: Collect specimen in the provided container, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

**CDAU7 81410**

**Drug Abuse Survey with Confirmation, Panel 9, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 30 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 30 mL in 1 plastic bottle. 3. No preservative. Additional Information:
1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain-of-custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order CDA7X / Drug Abuse Survey with Confirmation, Panel 9, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

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### Drug Abuse Survey with Confirmation, Urine

**CDAU 9446**

**Specimen Requirements:** Supplies: Urine Container, 60 mL (T313) Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine container (T313) Specimen Volume: 30 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 30 mL in 1 plastic container. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 4. Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

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### Drug Screen, Prescription/OTC, Chain of Custody, Serum

**DSSX 62723**

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) containing the specimen seals and documentation are required Container/Tube: Red top; kit contains the specimen seals and documentation required Preferred: One 10-mL red Acceptable: One 5-mL red Specimen Volume: 2.75 mL Collection Instructions: Collect specimen, centrifuge within 2 hours of collection and aliquot serum, cap and seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: 1. This test is not appropriate for drugs of abuse/illicit drug testing, including benzodiazepines, opioids, barbiturates, cocaine, amphetamine type stimulants. 2. This test is not appropriate for assessment of therapeutic compliance. 3. Not intended for use in employment-related testing. 4. See Table 1 in Prescription and Over-the-Counter (OTC) Drug Screens in Special Instructions.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**

Serum Red Refrigerated (preferred) 14 days
**CPT Code Information:** 80307

### Drug Screen, Prescription/OTC, Chain of Custody, Urine

**PDSUX**

**62741**

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 30 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information 1. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADLTX / Adulterants Survey, Chain of Custody, Urine. For additional information, refer to ADLTX / Adulterants Survey, Chain of Custody, Urine. 2. Submitting less than 30 mL will compromise our ability to perform all necessary testing. 3. Not intended for use in employment-related testing. 4. See Prescription and Over-the-Counter (OTC) Drug Screens in Special Instructions.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 3 hours

**CPT Code Information:** 80307

### Drug Screen, Prescription/OTC, Serum

**DSS**

**8421**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2.75 mL Additional Information: 1. This test is not appropriate for drugs of abuse or illicit drug testing, including benzodiazepines, opioids, barbiturates, cocaine, amphetamine type stimulants. 2. This test is not appropriate for assessment of therapeutic compliance. 3. Not intended for use in employment-related testing. 4. For chain-of-custody testing, order DSSX / Drug Screen, Prescription/OTC, Chain of Custody, Serum.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 3 hours

**CPT Code Information:** 80307

### Drug Screen, Prescription/OTC, Urine

**PDSU**

**88760**

**Specimen Requirements:** Supplies: Plastic, 60-mL urine bottle (T313) Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 30 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. See Prescription and Over-the-Counter (OTC) Drug Screens in Special Instructions. 2. For chain-of-custody testing, order PDSUX / Drug Screen,
Prescription/OTC, Chain of Custody, Urine. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. Not intended for use in employment-related testing. Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Urine
  - Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 3 hours

**CPT Code Information:** 80307

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**DSM4X 62721**

**Drugs of Abuse Screen 4, Chain of Custody, Meconium**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain-of-custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.45 g (approximately 0.5 teaspoon)

**Transport Temperature:**
- Meconium
  - Frozen (preferred) 14 days
  - Refrigerated 24 hours

**CPT Code Information:** 80307

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**DSM5X 62722**

**Drugs of Abuse Screen 5, Chain of Custody, Meconium**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain-of-custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.45 g (approximately 0.5 teaspoon)

**Transport Temperature:**
- Meconium
  - Frozen (preferred) 14 days
  - Refrigerated 24 hours

**CPT Code Information:** 80307

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**DASM4 60553**

**Drugs of Abuse Screen, Meconium 4**

**Specimen Requirements:** Supplies: Stool container, Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.45 g (approximately 0.5 teaspoon)
**Transport Temperature:**
Meconium Frozen (preferred) 14 days
Refrigerated 24 hours

**CPT Code Information:** 80307; See individual reflex tests for appropriate CPT codes;

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**Drugs of Abuse Screen, Meconium 5**

**Specimen Requirements:** Supplies: Stool container, Small (Random), 4 oz (T288)
Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.45 g (approximately 0.5 teaspoon)

**Transport Temperature:**
Meconium Frozen (preferred) 14 days
Refrigerated 24 hours

**CPT Code Information:** 80307; See individual reflex tests for appropriate CPT codes;

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**Duchenne/Becker Muscular Dystrophy DMD Gene, Large Deletion and Duplication Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 1 mL Amniotic Fluid: 10 mL Chorionic Villus: 5 mg

**Transport Temperature:**
Varies

**CPT Code Information:** 81161-DMD (dystrophin) (eg, Duchenne/Becker muscular dystrophy) deletion analysis and duplication analysis, if performed; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant
recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);  

**DUCK**

**Duck Feathers, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**FDME**

**Duck Meat IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

**DULOX**

**Duloxetine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. As is the case for most therapeutic drugs, trough specimens are preferred for monitoring duloxetine concentrations and should be drawn immediately before the next scheduled dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Red Refrigerated (preferred) 14 days

Frozen 14 days

Ambient 24 hours

**CPT Code Information:** 80332; G0480 (if appropriate);
E-Cadherin Immunostain, Bone Marrow, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed, decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded bone marrow tissue block.

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

E-Cadherin Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Early Epileptic Encephalopathy Panel (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81302; 81403; 81404 x 6; 81405 x 3; 81406 x 9; 81407 x 3; 81479;

Eastern Equine Encephalitis Antibody Panel, IgG and IgM, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86652 x 2

Eastern Equine Encephalitis Antibody, IgG and IgM, Serum
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86652 x 2

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**Eastern Sycamore, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Echinococcus Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86682

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**Eculizumab Monitoring Panel, Serum**

**Specimen Requirements:** Patient Preparation: 1. Fasting preferred 2. Recommended timeframe for the blood draw is a trough, or immediately prior to next intravenous infusion. Specimen Type: Serum Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate serum from clot. 3. Freeze specimen within 30 minutes.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Red 14 days
- Frozen 14 days

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*Current as of January 8, 2019 2:39 am CST*  
*800-533-1710 or 507-266-5700 or mayocliniclabs.com*
ECULI
65676

Eculizumab, Serum

**Specimen Requirements:** Patient Preparation: Pembrolizumab/Keytruda must be discontinued at least 4 weeks prior to testing for eculizumab quantitation in serum. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
   Frozen 30 days
   Ambient 4 days

CPT Code Information: 86160-Complement; antigen, each component; 86161-Complement; functional activity, each component;

EGFR Gene, Mutation Analysis, 29 Mutation Panel, Tumor

**Specimen Requirements:** Pathology report must accompany specimen in order for testing to be performed. Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Container/Tube: Slides Specimen Volume: 1 stained and 5 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 5 unstained, non-baked slides with 5-micron thick sections of the tumor tissue.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 5 unstained, nonbaked slides with 5-microns thick sections of the tumor tissue.

**Transport Temperature:**
Varies Ambient (preferred)
   Frozen
   Refrigerated

CPT Code Information: 80299

EGFR (epidermal growth factor receptor) (eg, non-small cell lung cancer) gene analysis, common variants (eg, exon 19 LREA deletion, L858R, T790M, G719A, G719S, L861Q); Slide Review; 88381-Microdissection, manual;

FEGWH
57584

Egg White IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
**Egg White IgG4**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**Egg White, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Egg Whole IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003
**FEWHG 57530**

**Egg Whole IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**FEGYK 57582**

**Egg Yolk IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**YOLK 82753**

**Egg Yolk, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**EGGP 82477**

**Eggplant, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**CPT Code Information:** 86003
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**EHRCP** 81480

**Ehrlichia Antibody Panel, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top
Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86666 x 2

**EHRC** 81487

**Ehrlichia chaffeensis (HME) Antibody, IgG, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top
Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.15 mL

Transport Temperature:
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86666

**EHRL** 84319

**Ehrlichia/Anaplasma, Molecular Detection, PCR, Blood**

Specimen Requirements: Container/Tube: Lavender top (EDTA)
Specimen Volume: 1 mL

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87798 x 4

**FELAS** 90158

**Elastase, Pancreatic, Serum**

Specimen Requirements: Draw blood in a plain, red-top or a serum gel tube(s). Separate
immediately and send 3 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Patient preparation: 1. The patient should fast for 10 to 12 hours prior to collection. 2. Medications that affect pancreatic activity should be discontinued, if possible, for at least 48 hours prior to collection of specimen.

**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Serum Frozen 180 days

**CPT Code Information:** 83519

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**ELDR**

**82392**

**Elder, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
Frozen 90 days

**CPT Code Information:** 86003

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**EFPO**

**35091**

**Electrolyte and Osmolality Panel, Feces**  
**Specimen Requirements:** Collection Container/Tube: Stool container (T291) Specimen Volume: 10 g Collection Instructions: Collect a very liquid stool specimen. Additional Information: 1. Do not send formed stool. In the event a formed stool is submitted, the test will not be performed. The report will indicate "A formed stool specimen was submitted for analysis. This test was not performed because it only has clinical value if performed on a watery stool specimen." 2. Osmolality results will be reported as mOsm/kg regardless of collection duration. 3. Sodium, chloride, and potassium will be reported as mmol/L. 4. Magnesium and phosphorus will be reported as mg/dL.

**Specimen Minimum Volume:** 5 g  
**Transport Temperature:**  
Fecal Frozen (preferred) 14 days  
Refrigerated 7 days  
Ambient 48 hours

**CPT Code Information:** 82438-Chloride; 83735-Magnesium; 84302-Sodium; 84100-Phosphorus; 84999 x 2-Osmolality, Potassium;

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**ELPSR**

**113632**

**Electrolyte Panel, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated 24 hours

**CPT Code Information:** 80051-Electrolyte Panel (if all 4 are performed); 82435-Chloride (if all 4 are not performed); 84295- Sodium (if all 4 are not performed); 84132-Potassium (if all 4 are not performed); 82374-Bicarbonate (if all 4 are not performed);

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**Electron Microscopy**

**Specimen Requirements:** Tumor biopsies must be accompanied by hematoxylin and eosin-stained slides and a paraffin block. Supplies: Electron Microscopy Kit (T660) Specimen Type: Fixed wet tissue Container/Tube: Electron Microscopy Kit (T660) or leak-proof container Specimen Volume: Entire specimen Collection Instructions: Collect specimen according to the instructions in Electron Microscopy Procedures of Handling Specimens for Electron Microscopy in Special Instructions. Do not place on ice, dry ice, or freeze. Additional Information: PATHC / Pathology Consultation may be added if deemed necessary by the reviewing pathologist. Alternative Specimen Type: Whole Blood Note: If test indication is for neuronal ceroid lipofuscinosis (NCL), whole blood may be submitted in lieu of fixed wet tissue. This is only applicable for a presumptive diagnosis of NCL; specimens submitted for any other reason will be rejected. Container/Tube: Electron Microscopy Kit (T660), green top (sodium heparin), or yellow top (ACD [solution B]) Specimen Volume: 5 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
EM Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 88348

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**Electrophoresis, Protein, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Submission Container/Tube: Plastic, 60-mL urine bottle and plastic, 5-mL tube (T465) Specimen Volume: 50 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Aliquot specimen between containers. 3. Label specimens appropriately (60-mL bottle for protein electrophoresis and 5-mL tube for protein, total). Additional Information: See Urine Preservatives in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 25 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 5 days
- Ambient 72 hours

**CPT Code Information:** 84156-Protein, total; 84166-Electrophoresis, protein; 86335-Immunofixation (if appropriate);
**Electrophoresis, Protein, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 10 mL Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Indicate specimen source; acceptable body fluid types are peritoneal (abdominal, ascites, paracentesis, peritoneal), pleural (chest, thoracentesis, pleural), drain (drainage, Jackson-Pratt (JP) drain), pericardial, spinal (CSF or ventricular), synovial (joint, knee, elbow), and vitreous fluids

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Body Fluid Refrigerated (preferred) 7 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 84166, 84157

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**Electrophoresis, Protein, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Submission Container/Tube: Plastic, 60-mL urine bottle and plastic, 5-mL tube (T465) Specimen Volume: 50 mL Collection Instructions: 1. Collect a random urine specimen. 2. Aliquot specimen between containers. 4. Label specimens appropriately (60-mL urine bottle for protein electrophoresis and 5-mL tube for protein, total).

**Specimen Minimum Volume:** 25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 5 days
- Ambient 72 hours

**CPT Code Information:** 84156-Protein, total; 84166-Electrophoresis, protein; 86335-Immunofixation (if appropriate); 800-533-1710 or 507-266-5700 or mayocliniclabs.com

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**Electrophoresis, Protein, Serum**

**Specimen Requirements:** Patient Preparation: Fasting (12 hour) preferred but not required Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 84155; 84165; 84999 (if appropriate); 86334 (if appropriate);
**Electrophoresis, Protein, Serum**

**Specimen Requirements:** Patient Preparation: Fasting (12 hour) preferred but not required
Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 84155; 84165; 86334-Immunofixation (if appropriate);

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**Elm, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**EM, Renal Biopsy (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88348

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**Emery-Dreifuss Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404; 81405 x 2; 81406; 81479;

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**Encainide (Enkaidr), ODE and MODE**

**Specimen Requirements:** Submit only 1 of the following: Plasma Draw blood in a green-top (sodium heparin) tube(s). Plasma gel tube is not acceptable. Spin down and send 1 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s). Serum gel
tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80375

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**Encephalopathy with Seizures Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81302; 81403; 81404 x 6; 81405 x 6; 81406 x 9; 81407 x 3; 81479;

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**Encephalopathy, Autoimmune Evaluation, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
- Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 72 hours

**CPT Code Information:** 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKC autoantibody; 83519-N-type calcium channel antibody; 83519-P/Q-type calcium channel antibody; 86255-AGNA-1; 86255-Antithyroid microsomal antibody; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-1; 86255-PCA-2; 86255-PCA-Tr; 86255-AMPAR-Ab; 86255-GABAR-Ab; 86255-NMDAR-Ab; 86341-GAD65; 86255-AMPAR-Ab titer (if appropriate); 86255-GABAR-Ab titer (if appropriate); 86255-NMDAR-Ab titer (if appropriate); 86255-NMO/AQP4-IgG FACS titer (if appropriate); 86255-NMO/AQP4-IgG FACS titer (if appropriate); 86255-NMDAR-Ab titer (if appropriate); 86255-AMPAR-Ab titer (if appropriate); 86255-GABAR-Ab titer (if appropriate); 86255-NMDAR-Ab titer (if appropriate); 86255-NMO/AQP4-IgG FACS titer (if appropriate); 86255-NMO/AQP4-IgG FACS titer (if appropriate); 86255-NMDAR-Ab titer (if appropriate); 86255-AMPAR-Ab titer (if appropriate); 86255-GABAR-Ab titer (if appropriate);

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**Encephalopathy, Autoimmune Evaluation, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial
- Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 72 hours
**ESTUF 35851**

**Endometrial Stromal Tumors (EST), 7p15 (JAZF1), 6p21.32 (PHF1), 17p13.3 (YWHAE) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Six consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Three consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**FEGAT 57987**

**Endomysial (EMA) IgG antibody titer**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Serum Frozen (preferred) 365 days
  - Ambient 30 days
  - Refrigerated 30 days

**CPT Code Information:** 86255 - screen; 86256 â€“ titer (if appropriate);

**EMAT 65091**

**Endomysial (IgA), Titer, Serum**

**Specimen Requirements:** Only orderable as a reflex. For more information see EMA /
Endomysial Antibodies (IgA), Serum.

**Specimen Minimum Volume:** Adults: 1 mL/Pediatrics: 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 14 days

**CPT Code Information:** 86256

### EMA

Endomysial Antibodies (IgA), Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red Top Specimen

**Volume:** 2 mL

**Specimen Minimum Volume:** Adults: 1 mL/Pediatric: 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 14 days

**CPT Code Information:** 86255-screen; 86256-titer (if appropriate);

### EGPL

English Plantain, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen

**Volume:** 0.5 mL for each 5 allergens requested

**Additional Information:** Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### SAM

Entamoeba histolytica Antibody, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen

**Volume:** 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 7 days
**Entamoeba histolytica Antigen, EIA**

**Specimen Requirements:** Preferred Specimen Type: Unpreserved stool Supplies: Sterile stool container Container/Tube: Sterile stool container Specimen Volume: 2 g Specimen Stability Information: Frozen Collection Instructions: Collect 2 grams of fresh unpreserved stool in sterile container. Send specimen frozen. NOTE: Separate specimens must be submitted when multiple tests are ordered.

**Transport Temperature:**
- Fecal Frozen (preferred) 7 days
- Refrigerated 48 hours

**CPT Code Information:** 86753

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**Enteric Pathogens Culture, Feces**

**Specimen Requirements:** Patient Preparation: Medications: Do not use antacids, barium, bismuth, antidiarrheal medication, or oily laxatives before collection of specimen. Supplies: C and S vial (T058) Specimen Type: Preserved Feces Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S [T058]) Specimen Volume: Representative portion of fecal specimen Collection Instructions: 1. Collect fresh feces and submit 1 gram or 5 mL in container with transport medium. 2. Place feces in preservative within 2 hours of collection. 3. Place vial in a sealed plastic bag.

**Transport Temperature:**
- Fecal Ambient (preferred) 4 days
- Refrigerated 4 days

**CPT Code Information:** 87045-Enteric Pathogens Culture, Stool-with isolation and preliminary examination; 87046 x 3-Stool Culture Aerobic Bacteria, each; 87077-Ident by MALDI-TOF mass spec (if appropriate); 87153-Aerobe Ident by Sequencing (if appropriate); 87077-Additional Identification Procedure (if appropriate); 87147 x 3-Serologic Agglut Method 1 Ident (if appropriate); 87147 x 4-Serologic Agglut Method 3 Ident (if appropriate);

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**Enterovirus, Molecular Detection, PCR**

**Specimen Requirements:** Submit a raw clinical sample (not a culture isolate) for enterovirus PCR. This test will detect enterovirus, but will not differentiate viruses in this family or provide serotyping information. Submit only 1 of the following specimens: Specimen Type: Body fluid Sources: Pericardial, peritoneal, or pleural Container/Tube: Sterile container Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge. Specimen Type: Respiratory Sources: Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate, swab or washing, throat or nasal swab, sputum, or tracheal aspirate Container/Tube: Sterile container Specimen Volume: 1.5 mL Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge. Specimen Type: Swab Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Sources:
Dermal, eye, rectal, genital, nasopharyngeal, throat, nasal or urethral Container/Tube: Multimicrobe media (M4-RT) (T605) or similar viral transport media (M4 or M5) Specimen Volume: Entire specimen Collection Instructions: 1. Rectal swab must have no visible stool. 2. Place swab back into multimicrobe media (M4-RT, M4, or M5).

**Specimen Minimum Volume:** Body Fluid or Spinal Fluid: 0.3 mL Respiratory Specimen: 1 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87498

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**Enterovirus, Molecular Detection, PCR, Plasma**

**Specimen Requirements:** Submit a raw clinical sample (not a culture isolate) for enterovirus PCR. This test will detect enterovirus, but will not differentiate viruses in this family or provide serotyping information. Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Spin down promptly.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87498

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**Eosinophil Cationic Protein (ECP)**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 30 days

**CPT Code Information:** 83520

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**Eosinophils, Urine**

**Specimen Requirements:** Container/Tube: Unstained slide Specimen Volume: 1 slide Collection Instructions: 1. Collect a random urine specimen. 2. Spin 10 mL of a random urine collection in centrifuge. 3. Pour off supernatant. Assess urine sediment for presence of white blood cells (WBC). If no WBCs are seen, the eosinophil test cannot be performed. If WBCs are present, prepare slides using the spun sediment. 4. Unstained slide should be prepared within 2 hours of collection. 5. Centrifuge urine in cytospin centrifuge at speed of 750 rpm for 5 minutes. 6. Guidelines for slide preparation. Use the sediment to prepare slides as follows: a. 150 mcL of sample for 1 to 3 WBC/high power field (hpf). b. 100 mcL of sample for moderate to normal sediment (<50 cell/hpf). c. 50 mcL of sample for heavier sediment (>50 cells/hpf). d. 25 mcL for packed fields of sediment. Additional Information: 1. Stained cytospin
slides on Mayo Clinic Laboratories patients are retained for 7 days. 2. Call 800-533-1710 or
507-266-5700 with questions.

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 85999

**FEPHD 90109**

**Ephedrine, Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a
green-top sodium heparin tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium
heparin plasma refrigerated in a plastic vial. If specimen is not light protected foil wrap specimen to
protect from light. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin
down and send 3 mL of serum refrigerated in a plastic vial. If specimen is not light protected foil wrap
specimen to protect from light.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80324; G0480 (if appropriate);

**EPUR 82854**

**Epicoccum purpurascens, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**SPBX 70599**

**Epidermal Nerve Fiber Density Consultation**

**Specimen Requirements:** Preferred: Specimen Type: Skin punch biopsy tissue Collection
Instructions: 1. A Skin Punch Biopsy Kit containing fixatives, buffer, and cryoprotectant is required (no
substitutions accepted). For ordering information, call 507-284-8065. 2. Prepare and transport specimen
per instructions on the Epidermal Nerve Fiber Density Instructions (T703) in Special Instructions.
Specimen Stability: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Slides Additional
Information: 1. Slides reacted with PGP 9.5, using a PGP 9.5 protocol for visualizing epidermal nerve fibers, are required. 2. Hematoxylin and eosin-stained slides and Congo red-stained slides are optional. 

Specimen Stability: Ambient (preferred)/Refrigerated 
Specimen Type: Tissue block and PGP9.5-reacted slides

Collection Instructions: 1. Slides reacted with PGP 9.5, using a PGP 9.5 protocol for visualizing epidermal nerve fibers, are required. 2. Tissue block may be used to create hematoxylin and eosin-stained slides and Congo red-stained slides. Visualization of epidermal nerve fibers cannot be done on paraffin blocks. Specimen Stability: Ambient (preferred)/Refrigerated

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Options</th>
<th>Tempatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>Refrigerated</td>
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<tr>
<td></td>
<td>(preferred)</td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
</tr>
</tbody>
</table>

**CPT Code Information:**

88305-(if appropriate); 88313-(if appropriate); 88321-(if appropriate); 88323-(if appropriate); 88323-26-(if appropriate); 88325-(if appropriate); 88348-(if appropriate); 88356-(if appropriate); 88342-(if appropriate);

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**FEPI 57960**

**Epidermophyton floccosum IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred)  
- 28 days
- Frozen: 365 days
- Ambient: 28 days

**CPT Code Information:** 86003

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**G116 603776**

**Epilepsy Expanded Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81302; 81403; 81404 x 8; 81405 x 10; 81406 x 18; 81407 x 5; 81408 x 2; 81479;

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**G124 603784**

**Epilepsy with Migraine Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81405; 81406 x 2; 81407 x 2; 81479;

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**EPS1 48403**

**Epilepsy, Autoimmune Evaluation, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum  Refrigerated (preferred)  28 days
    Frozen  28 days
    Ambient  72 hours

**CPT Code Information:** 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKC autoantibody; 83519-N-type calcium channel antibody; 83519-P/Q-type calcium channel antibody; 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-2; 86255-PCA-Tr; 86255-AMPAR-Ab; 86255-GABAR-Ab; 86255-NMDAR-Ab; 86341-GAD65; 86255-LGIC5; 86255-CS2CS; ; ; 86255-PCA-1 (if appropriate); 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5 Western blot confirmation (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86256-AMPAR-Ab titer (if appropriate); 86256-GABAR-Ab titer (if appropriate); 86256-NMDAR-Ab titer (if appropriate); 86256- NMO/AQP4-IgG FACS titer (if appropriate);

**EPC1** 48406

**Epilepsy, Autoimmune Evaluation, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial  Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred)  28 days
- Frozen  28 days
- Ambient  72 hours

**CPT Code Information:** 83519-Neuronal VGKC autoantibody; 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-2; 86255-PCA-Tr; 86255-AMPAR-Ab; 86255-GABAR-Ab; 86255-NMDAR-Ab; 86341-GAD65; 86255-LGIC5; 86255-CS2CS; ; ; 86255-PCA-1 (if appropriate); 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5 Western blot confirmation (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86256-AMPAR-Ab titer (if appropriate); 86256-GABAR-Ab titer (if appropriate); 86256-NMDAR-Ab titer (if appropriate); 86256- NMO/AQP4-IgG FACS titer (if appropriate);

**ESPAN** 603346

**Epilepsy/Seizure Genetic Panels by Next Generation Sequencing (NGS)**

**Specimen Requirements:** Specimen Type: Whole blood  Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)  Acceptable: Any anticoagulant  Specimen Volume: 3 mL  Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.  Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** 81185; 81189; 81302; 81403; 81404; 81405; 81406; 81407; 81408; 81479;

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**EPIP1 81709**

**Epithelia Panel # 1**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:** 86003

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**EPIP2 81881**

**Epithelia Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:** 86003

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**EMAI 70424**

**Epithelial Membrane Antigen (EMA) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
EBNA2
Epstein Barr Nuclear Antigen 2 (EBNA2) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

LMP1I
Epstein Barr Virus Latency Membrane Protein 1 (EBV-LMP1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

SEBV
Epstein-Barr Virus (EBV) Antibody Profile, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days

Frozen 14 days

CPT Code Information: 86664-EBNA; 86665 x 2-VCA, IgG and IgM;

EBV
Epstein-Barr Virus (EBV) In Situ Hybridization, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 4 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
**Transport Temperature:**
 TECHONLY Ambient
(preferred) Refrigerated

**CPT Code Information:** 88365-TC, primary; 88364-TC, if additional ISH;

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**EBVE**

56104

Epstein-Barr Virus (EBV), IgG Antibody to Early Antigen, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86663

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**LEBV**

81239

Epstein-Barr Virus (EBV), Molecular Detection, PCR

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Specimen Type: Fluid Sources: Spinal fluid, sterile body fluids (peritoneal fluid/ascites, pericardial fluid, pleural fluid/thoracentesis, amniotic, or oculair Preferred: 12 x 75-mm screw cap vial (T465) Acceptable: Sterile container Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge. Supplies: Aliquot Tube, 5 mL (T465) Specimen Type: Fluid Sources: Respiratory; bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate Container/Tube: Preferred: 12 x 75-mm screw cap vial (T465) Acceptable: Sterile container Specimen Volume: 1.5 mL Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Specimen Type: Swab Sources: Eye swabs and upper respiratory swabs (nasal, throat) Container/Tube: Multimicrobe media (M4-RT) (T605) Collection Instructions: Place swab back into multimicrobe media (M4-RT [T605], M4 or M5) Specimen Type: Bone marrow Container/Tube: Lavender top (EDTA) only Specimen Volume: 0.5 mL Additional Information: Clotted specimens will be rejected. Supplies: M4-RT (T605) Specimen Type: Tissue Sources: Brain, colon, kidney, liver, lung, etc. Preferred: Multimicrobe medium (M4-RT) (T605) Acceptable: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT [T605], M4 or M5) Specimen Volume: Entire collection Collection Instructions: Submit only fresh tissue.

**Specimen Minimum Volume:** Body Fluid, Ocular Fluid, Spinal Fluid: 0.3 mL Respiratory Specimens: 1 mL Tissue: 2 x 2-mm biopsy

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information:** 87798

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**EBVQU**

65754

Epstein-Barr Virus DNA Detection and Quantification, Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission
Container/Tube: Plastic vial
Specimen Volume: 1.5 mL
Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer’s instructions. 2. Pour off plasma into aliquot tube.

Specimen Minimum Volume: 0.8 mL

Transport Temperature:
- Plasma EDTA: Frozen (preferred) 30 days
  - Refrigerated: 7 days

CPT Code Information: 87799

ERCC-1 Immunostain, Technical Component Only

Specimen Requirements:
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick
- Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
- TECHONLY Ambient (preferred)
  - Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

ERG Immunostain, Technical Component Only

Specimen Requirements:
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick
- Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
- TECHONLY Ambient (preferred)
  - Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Erythrocytosis Evaluation

Specimen Requirements:
- A total of 3 specimens are required to perform this profile; all 3 specimens must arrive within 72 hours of draw:
  - Whole blood EDTA for A2F, HBEL, MASS
  - Whole blood sodium heparin for P50*
  - Normal shipping control: Whole blood sodium heparin for P50*
- Please note: If no sodium heparin patient or control specimens are received, the P50 test cannot be performed.
- Patient: Container/Tube: Lavender top (EDTA) and green top (heparin)
- Specimen Volume: EDTA: 5 mL; Heparin: 4 mL
- Collection Instructions: 1. Immediately refrigerate specimens after draw.
  2. Send specimen in original tube. Do not aliquot.
  3. Rubber band patient specimen and control vial together.
- Normal Shipping Control: Container/Tube: Green top (heparin)
- Specimen Volume: 4 mL
- Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated, nonsmoking person at the same time as the patient.
  2. Label clearly on outermost label normal control.

*Please note: If no sodium heparin patient or control specimens are received, the P50 test cannot be performed.

Current as of January 8, 2019 2:39 am CST
800-533-1710 or 507-266-5700 or mayocliniclabs.com
Immediately refrigerate specimen after draw. 4. Send specimen in original tube. Do not aliquot. 5. Rubber band patient specimen and control vial together.

**Specimen Minimum Volume:** EDTA Blood: 2.5 mL Heparin Blood: 1 mL

**Transport Temperature:**
- Control: Refrigerated 72 hours
- WB Sodium Heparin: Refrigerated 72 hours
- Whole Blood EDTA: Refrigerated 72 hours

**CPT Code Information:** Erythrocytosis Evaluation; 82820-Hemoglobin O2 affinity (p50); 83020-Hemoglobin electrophoresis; 83021-Hemoglobin A2 and F; 83789-Hemoglobin Variant by Mass Spectroscopy (MS), Blood; ; Hemoglobin, Unstable, Blood; 83068 (if appropriate); ; IEF confirms; 82664 (if appropriate); ; Hemoglobin F, Red Cell Distribution, Blood; 88184 (if appropriate); ;

**EPO**

**Erythropoietin (EPO), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 14 days
  - Frozen: 14 days

**CPT Code Information:** 82668

**EPOR**

**Erythropoietin Receptor (EPOR) Gene, Exon 8 Sequencing**

**Specimen Requirements:** Only orderable as part of a profile. For more information see HEMP / Hereditary Erythrocytosis Mutations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole blood: Refrigerated 30 days

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

**FFES**

**Estradiol Free, Serum (includes Estradiol and SHBG)**

**Specimen Requirements:** Draw blood in a plain red-top tube (serum gel tube is not acceptable). Spin down, pour off into plastic vial within 1 hour of collection, and send 3 mL serum frozen.

**Specimen Minimum Volume:** 1.5 mL Note: This volume does not allow for repeat testing.

**Transport Temperature:**
- Serum Red: Frozen (preferred) 180 days
  - Ambient: 48 hours
  - Refrigerated: 48 hours
CPT Code Information: 82670 - Estradiol; 84270 - Sex Hormone binding globulin; 84999 - Unlisted chemistry procedure;

Estradiol, Rapid, Immunoassay, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
- Serum Frozen (preferred) 180 days
- Refrigerated 5 days
- Ambient 24 hours

CPT Code Information: 82670

Estradiol, Serum


Specimen Minimum Volume: 0.8 mL

Transport Temperature:
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

CPT Code Information: 82670

Estriol, Unconjugated, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.6 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 82677
**Estrogen Receptor (ER) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Estrogen Receptor 1 (ESR1) Mutation Analysis, Tumor**

**Specimen Requirements:** Preferred: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Slides: 1 stained and 10 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nombaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (Direct smears or ThinPrep) Slides: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded tissue block (preferred) 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides from 1 tissue block) and at least 20% tumor cells

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479; 88381;

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**Estrogen Receptor Beta-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated
**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### Estrogen/Progesterone Receptor, Semi-Quantitative Immunohistochemistry, Manual

**Specimen Requirements:** Specimen Type: Breast carcinoma Preferred: A paraffin-embedded tissue block containing in-situ, invasive or metastatic breast carcinoma tissue that has been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and shipped at ambient temperature Acceptable: 3 unstained sections, containing carcinoma, on charged slides cut at 4 microns <1 month ago and shipped at ambient temperature Supplies: Pathology Packaging Kit (T554) Specimen Type: Non-breast carcinoma Preferred: A paraffin-embedded tissue block containing carcinoma tissue that has been fixed in 10% neutral buffered formalin and shipped at ambient temperature Acceptable: 3 unstained sections, containing carcinoma, on charged slides cut at 4 microns <1 month ago and shipped at ambient temperature Collection Instructions: Submit paraffin-embedded carcinoma tissue. Additional Information: 1. When ordering ERPR / Estrogen/Progestosterone Receptor, Semi-Quantitative Immunohistochemistry, Manual, the following questions, as stated on the order form or presented electronically, must be answered: a. "Was specimen fixed in 10% neutral buffered formalin within 1 hour from surgical collection time? Yes, No, or Unknown." b. "Has specimen been fixed in 10% neutral buffered formalin for 6 to 72 hours? Yes, No, or Unknown." 2. According to the College of American Pathologists (CAP)/American Society of Clinical Oncology (ASCO) guidelines, estrogen/progesterone receptor protein immunohistochemical test results are only valid for nondecalcified, paraffin-embedded specimens fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total time of 6 to 72 hours. Delay to fixation, under-or overfixation may affect these results. 3. Paraffin blocks will be returned with final report.

**Transport Temperature:**
- Special Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88360 x 2

### Estrogens, Estrone (E1) and Estradiol (E2), Fractionated, Serum

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.2 mL Collection Instructions: 1. Spin down and remove serum from red blood cells within 2 hours of draw. 2. Aliquot serum to submission container.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82670-Estradiol; 82679-Estrone; 82671 Estrogens, fractionated;
**Estrone, Serum**

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Plastic vial
Specimen Volume: 1.2 mL Collection Instructions: 1. Spin down and remove serum from red blood cells within 2 hours of draw. 2. Aliquot serum to submission container. Additional Information: See Steroid Pathways in Special Instructions.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 82679

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**Ethanol, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Grey top (potassium oxalate/sodium fluoride) Acceptable: Any anticoagulant Specimen Volume: 2 mL Collection Instructions: Specimen must be sent in original tube.

**Specimen Minimum Volume:** 0.5 mL or amount to fill 1 tube

**Transport Temperature:**
Whole Blood NaFl-KOx Refrigerated (preferred) 72 hours
Frozen 14 days
Ambient 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);

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**Ethanol, Chain of Custody, Blood**

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) Container/Tube:
Chain-of-Custody Kit (T282) containing the specimen container seals and documentation required. Preferred: Grey top (potassium oxalate/sodium fluoride) Acceptable: Any anticoagulant Specimen Volume: 2 mL Collection Instructions: 1. Do not use alcohol to clean arm. Use alternative such as Betadine to cleanse arm before collecting any specimen for volatile testing. 2. Specimen must be sent in original tube. Collect specimen, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing.

**Specimen Minimum Volume:** 0.5 mL or amount to fill 1 tube

**Transport Temperature:**
Whole Blood NaFl-KOx Refrigerated (preferred) 72 hours
Frozen 14 days
Ambient 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);
**Ethanol, Serum**

**Specimen Requirements:** Patient Preparation: Do not use alcohol to clean arm. Use alternative such as Betadine to cleanse arm before collecting any specimen for volatile testing. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 72 hours
- Frozen 28 days
- Ambient 24 hours

**CPT Code Information:** 80307

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**Ethosuximide, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 28 days
- Ambient 14 days

**CPT Code Information:** 80168

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**Ethotoxin (Peganone)**

**Specimen Requirements:** Submit only 1 of the following specimens Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in plastic vial. Serum Draw in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80339

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**Ethyl Glucuronide Screen, Urine**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order ETGX / Ethyl Glucuronide Confirmation, Chain of Custody, Urine. 2. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine. 3. For additional information, refer to ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**

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<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
</table>
| Urine        | Refrigerated (preferred) 28 days
|              | Frozen 28 days
|              | Ambient 72 hours

**CPT Code Information:** 80307

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**ETGL**

**Ethylene Glycol, Serum**

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Centrifuge and remove serum from red blood cells within 2 hours of draw. 2. Aliquot serum to submission container.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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<th>Temperature</th>
<th>Time</th>
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</table>
| Serum         | Refrigerated (preferred) 14 days
|              | Ambient 14 days
|              | Frozen 14 days

**CPT Code Information:** 80320; G0480 (if appropriate);

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**EOXD**

**Ethylene Oxide, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

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<tr>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
</table>
| Serum        | Refrigerated (preferred) 14 days
|              | Frozen 90 days

**CPT Code Information:** 86003

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**ETVBF**

**ETV6 (12p13.2) Rearrangement, FISH**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood
Container/Tube: Green top (sodium heparin) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**ETV6F**

**ETV6 (12p13.2) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue
Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides
Specimen Volume: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**EUCL**

**Eucalyptus, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
**FECLT**

**57810**

**Euglobulin Clot Lysis Time**

**Specimen Requirements:** Collect blood in 3.2% sodium citrate light blue top tube. Centrifuge within 30 minutes after collection, freeze immediately. Send 2 mL platelet-poor plasma in plastic vial frozen. Note: 1. Prohibit exercise prior to drawing sample. 2. To avoid release of plasminogen activator, do not massage vein vigorously, pump fist excessively or leave tourniquet in place for a prolonged period.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Plasma Na Cit Frozen 21 days

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**EMAY**

**82846**

**Euroglyphus maynei, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

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**EHOR**

**82662**

**European Hornet, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

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**CPT Code Information:** 86003
**Everolimus, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL
Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. Do not centrifuge. 3. Send specimen in original tube. Additional Information: Therapeutic range applies to trough specimens drawn immediately prior to a.m. dose.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 28 days

- Frozen 28 days
- Ambient 7 days

**CPT Code Information:** 80169

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**Ewing Sarcoma (EWS), 22q12 (EWSR1) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Tissue Ambient (preferred)

Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**Ewing Sarcoma, by Reverse Transcriptase PCR (RT-PCR)**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue with a minimum of 5% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 5% tumor cell population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
**FACT**

**F-Actin Ab, IgG, S**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 83516

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**F2ISO**

**F2-Isoprostanes, Urine**

**Specimen Requirements:** Patient Preparation: Patient should not have taken nonsteroidal anti-inflammatory drugs within 72 hours or aspirin within 2 weeks prior to collection of a specimen. Container/Tube: Plastic, 5-mL urine tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 90 days
- Ambient 7 days

**CPT Code Information:** 82542

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**FABRZ**

**Fabry Disease, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) tube or yellow top (ACD) tube Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient...
>1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**

Varies

**CPT Code Information:** 81405-GLA (galactosidase, alpha) (eg, Fabry disease), full gene sequence

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**FC13A**

70428

**Factor 13a (FAC13A) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient

(preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**FACR8**

70430

**Factor 8 Related Antigen (FAC8) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient

(preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**F2_IS**

7806

**Factor II Inhibitor Screen**

**Specimen Requirements:** Only orderable as part of a profile. For more information see F2IS / Coagulation Factor II Inhibitor Screen, Plasma.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
CPT Code Information: 85335

**F9INH 83103**

**Factor IX Inhibitor Evaluation**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL in 2 plastic vials, 1 mL each

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85250-Factor IX activity assay; 85335-Bethesda titer (if appropriate); 85335-Factor IX inhibitor screen (if appropriate); 85390-26-Special coagulation interpretation (if appropriate);

**F9_IS 7802**

**Factor IX Inhibitor Screen**

**Specimen Requirements:** Only orderable as part of a reflex. For more information see F9INH / Factor IX Inhibitor Evaluation.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85335

**FC9K 83310**

**Factor IX Known Mutation Sequencing**

**Specimen Requirements:** Only orderable as a reflex at order entry for unit code FIXKM / Hemophilia B, Factor IX Gene Known Mutation Screening (Carrier Detection).

**Transport Temperature:**
Varies

**CPT Code Information:**

**FC9S 88639**

**Factor IX Mut Scrn Gene Sequencing**

**Specimen Requirements:** Only orderable as a reflex at order entry for test FIXMS / Hemophilia B, Factor IX Gene Mutation Screening.
Transport Temperature:
Varies

CPT Code Information:

F5_IS
7808
Factor V Inhibitor Screen, Plasma
Specimen Requirements: Only orderable as part of a profile. For more information see F5IS / Coagulation Factor V Inhibitor Screen, Plasma.
Specimen Minimum Volume: 2 mL
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85335

F5DNA
81419
Factor V Leiden (R506Q) Mutation, Blood
Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD) Acceptable: EDTA or sodium citrate Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Can be combined with other molecular coagulation tests; -MTHAC 5,10-Methylenetetrahydrofolate Reductase A1298C, Mutation, Blood -PTNT Prothrombin G20210A Mutation, Blood -MTHFR 5,10-Methylenetetrahydrofolate Reductase C677T, Mutation, Blood -MTHP 5,10-Methylenetetrahydrofolate Reductase C677T and A1298C Mutations, Blood
Specimen Minimum Volume: 1 mL blood in a 3-mL ACD tube
Transport Temperature:
Whole blood Ambient (preferred) 7 days
                  Frozen        14 days
                  Refrigerated 14 days

CPT Code Information: 81241-F5 (coagulation factor V) (eg, hereditary hypercoagulability) gene analysis, Leiden variant ; ;

F7_IS
7810
Factor VII Inhibitor Screen
Specimen Requirements: Only orderable as part of a profile. For more information see F7IS / Coagulation Factor VII Inhibitor Screen, Plasma.
Specimen Minimum Volume: 2 mL
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85335
**Factor VIII Inhibitor Evaluation**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Centrifuge, remove plasma, and centrifuge plasma again. 3. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally, < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If a priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85240-Factor VIII activity assay; 85335-Bethesda titer (if appropriate); 85335-Factor VIII inhibitor screen (if appropriate); 85390-26-Special coagulation interpretation (if appropriate);

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**Factor X Inhibitor Screen**

**Specimen Requirements:** Only orderable as part of a profile. For more information see F10IS / Coagulation Factor X Inhibitor Screen, Plasma

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85335

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**Factor XI Inhibitor Screen**

**Specimen Requirements:** Only orderable as part of a profile. For more information see F11IS / Coagulation Factor XI Inhibitor Screen, Plasma.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85335

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**Factor XIII (13), Screen**

**Specimen Requirements:** Only orderable as part of a profile. For more information see BDIAL / Bleeding Diathesis Profile, Limited.

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days
**Factor XIII, Functional**

**specimen requirements:** 1 mL platelet-poor plasma, shipped frozen. Draw blood into a 3.2% sodium citrate (light blue-top) tube. Centrifuge light blue-top tube 15 minutes at approx. 1500 g within 60 minutes of collection. Using a plastic pipette, remove plasma, taking care to avoid the WBC/platelet buffy layer and place into a plastic vial. Centrifuge a second time and transfer platelet-poor plasma into a new plastic vial. Plasma must be free of platelets (<10,000/mcl). Freeze immediately. Note: Note oral anticoagulant therapy

**specimen minimum volume:** 0.3 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

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**Factor XIII, Qualitative, with Reflex to Factor XIII 1:1 Mix**

**specimen requirements:** Draw one 5 mL lt. blue (sodium citrate) tube. Separate immediately and submit 2 mL platelet-poor plasma, ship frozen. Note: Critical frozen. Separate specimens must be submitted when multiple tests are ordered.

**specimen minimum volume:** 1 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

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**False Oat Grass, IgE**

**specimen requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**specimen minimum volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

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**False Ragweed, IgE**

**specimen requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FDP 35419**

**Familial Dysautonomia, Mutation Analysis, IVS20(+6T->C) and R696P**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL; Amniotic Fluid: 10 mL; Chorionic Villi: 5 mg

**Transport Temperature:** Varies Varies

**CPT Code Information:** 81260-IKBKAP (inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein) (eg, familial dysautonomia) gene analysis, common variants (eg, 2507+6T->C, R696P); 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate); Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate);

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**FHRGP 65748**

**Familial Hypercholesterolemia and Related Disorders Multi-Gene Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Transport Temperature:**
Varies

**CPT Code Information:** 81479; 81406 x 2;

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**FMTT 63032**

**Familial Mutation, Targeted Testing**

**Specimen Requirements:** Refer to Advisory Information for a complete list of genes tested by specimen type. Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Blood spot Supplies: Card-Blood Spot (Filter Paper) (T493) Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions. Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Prenatal Specimens Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:**
Amniotic Fluid: 10 mL Blood: 1 mL Chorionic Villi: 5 mg Blood Spots: 2

**Transport Temperature:**
Varies

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**FANCP 35416**

**Fanconi Anemia C Mutation Analysis, IVS4(+4)A->T and 322delG**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Yellow top (ACD) or lavender top (EDTA) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood.
2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen. Prenatal Specimens: Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid, Chorionic villi, Confluent cultured cells. Container/Tube: Amniotic fluid container, 15 mL tube containing 15 mL of transport media, T-25 flask. Specimen Volume: 20 mL, 20 mg, 2 flasks. Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated.

**Specimen Minimum Volume:**
- Blood: 0.5 mL
- Amniotic Fluid: 10 mL
- Chorionic Villi: 5 mg

**Transport Temperature:**
- Varies

**CPT Code Information:**
- 81242-FANCC (Fanconi anemia, complementation group C) (eg, Fanconi anemia, type C) gene analysis, common variant (eg, IVS4+4A->T); Fibroblast Culture for Genetic Test; Amniotic Fluid Culture/Genetic Test; Chorionic Villi Culture/Genetic Test; Confluent cultured cells; Maternal Cell Contamination, B; Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate).

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**FASC 70431**

**Fascin Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:**
- 88342-TC, primary; 88341-TC, if additional IHC;

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**FATF 8310**

**Fat, Feces**

**Specimen Requirements:**
- Patient Preparation: 1. For 3 days prior to and during the collection period: a. Patient should be on a fat-controlled diet (100-150 g fat per day). b. No laxatives (particularly mineral oil and castor oil). c. No synthetic fat substitutes (eg, Olestra) or fat-blocking nutritional supplements. 2. The use of diaper rash ointments will falsely elevate test results. Discontinue use during collection period. 3. Barium interferes with test procedure; a waiting period of 48 hours before stool collection analysis is recommended. Supplies: Stool Containers - 24, 48, 72 Hours Kit (T291) Container/Tube: Stool container (T291); complies with shipping requirements, do not use other containers. Specimen Volume: Preferred: Entire 48-, or 72-hour collection Acceptable: Entire 24-hour or random collection Collection Instructions: 1. All containers must be sent together. 2. The entire collection must contain at least 5 g of feces. 3. For a random collection, a minimum of 5 g (do not send entire collection) is required. 4. The number of containers sent should be indicated on the labels (1 of 4, for example). Additional Information: 1. Patient can store sample at refrigerate temperature during collection period. 2. A separate order and collection should take place if stool bicarbonate, calcium, chloride,
magnesium, osmolality, pH, potassium, sodium, or any microbiology testing is desired.

**Specimen Minimum Volume:** 5 g

**Transport Temperature:**
- Fecal Frozen (preferred) 180 days
- Refrigerated 180 days

**CPT Code Information:** 82710

### Fatty Acid Oxidation Probe Assay, Fibroblast Culture

**Specimen Requirements:** Submit only 1 of the following specimens:
- **Specimen Type:** Cultured fibroblasts
  - **Container/Tube:** T-75 or T-25 flask
  - **Specimen Volume:** 1 Full T-75 flask or 2 full T-25 flasks
- **Specimen Stability Information:** Ambient (preferred)/Refrigerated 24 hours
- **Specimen Type:** Skin biopsy
  - **Supplies:** Fibroblast Biopsy Transport Media (T115)
  - **Container/Tube:** Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]).
  - **Specimen Volume:** 4-mm punch
- **Specimen Stability Information:** Refrigerated (preferred)/Ambient

**Transport Temperature:**
- Tissue Varies

**CPT Code Information:** 82017-Acylcarnitines; quantitative, each specimen; 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

### Fatty Acid Profile, Comprehensive (C8-C26), Plasma

**Specimen Requirements:**
- **Collection Container/Tube:** Preferred: Green top (sodium heparin)
  - Acceptable: EDTA or lithium heparin
- **Specimen Volume:** 0.5 mL
- **Collection Instructions:**
  1. Fasting overnight (12-14 hours).
  2. Patient must not consume any alcohol for 24 hours before the specimen is drawn.
  3. Spin down within 45 minutes of draw.
- **Additional Information:**
  1. Patient's age is required.
  2. Include information regarding treatment, family history, and tentative diagnosis.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 92 days
  - Refrigerated 72 hours

**CPT Code Information:** 82542

### Fatty Acid Profile, Comprehensive (C8-C26), Serum

**Specimen Requirements:**
- **Patient Preparation:**
  1. Patient should fast overnight (12-14 hours).
  2. Patient must not consume any alcohol for 24 hours before the specimen is drawn.
- **Collection Container/Tube:** Preferred: Red top
  - Acceptable: Serum gel
- **Specimen Volume:** 0.5 mL
- **Collection Instructions:** Spin down within 45 minutes of draw.

**Specimen Minimum Volume:** 0.15 mL
Transport Temperature:
Serum Frozen (preferred) 92 days
Refrigerated 72 hours

CPT Code Information: 82542

**PFAPE** 60464  
**Fatty Acid Profile, Essential, Plasma**  
**Specimen Requirements:** Collection Container/Tube: Preferred: Green top (sodium heparin)  
Acceptable: EDTA or lithium heparin  
Submission Container/Tube: Plastic vial  
Specimen Volume: 0.5 mL  
Collection Instructions: 1. Fasting overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. 3. Spin down within 45 minutes of draw.  
Additional Information: 1. Patient's age is required. 2. Include information regarding treatment, family history, and tentative diagnosis.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**  
Plasma Frozen (preferred) 92 days  
Refrigerated 72 hours

CPT Code Information: 82542

**FAPEP** 82426  
**Fatty Acid Profile, Essential, Serum**  
**Specimen Requirements:** Patient Preparation: 1. Patient should fast overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn.  
Collection Container/Tube: Preferred: Red top  
Acceptable: Serum gel  
Submission Container/Tube: Plastic vial  
Specimen Volume: 0.5 mL  
Collection Instructions: Spin down within 45 minutes of draw.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**  
Serum Frozen (preferred) 92 days  
Refrigerated 72 hours

CPT Code Information: 82542

**FAPM** 81939  
**Fatty Acid Profile, Mitochondrial (C8-C18), Serum**  
**Specimen Requirements:** Patient Preparation: 1. Patient should fast overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn.  
Collection Container/Tube: Preferred: Red top  
Acceptable: Serum gel  
Submission Container/Tube: Plastic vial  
Specimen Volume: 0.5 mL  
Collection Instructions: Spin down within 45 minutes of draw.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**  
Serum Frozen (preferred) 92 days  
Refrigerated 72 hours
Fatty Acid Profile, Peroxisomal (C22-C26), Plasma

**Specimen Requirements:** Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA or lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Fasting-overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. 3. Spin down within 45 minutes of draw. Additional Information: 1. Patient's age and gender is required. 2. Include information regarding treatment, family history, and tentative diagnosis.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:** Plasma Frozen (preferred) 92 days Refrigerated 15 days

Fatty Acid Profile, Peroxisomal (C22-C26), Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Fasting-overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. 3. Spin down within 45 minutes of draw. Additional Information: 1. Patient's age and gender is required. 2. Include information regarding treatment, family history, and tentative diagnosis.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:** Serum Frozen (preferred) 92 days Refrigerated 15 days

FBN1 Full Gene Sequence, Varies

**Specimen Requirements:** Prior Authorization is available for this test. Submit the required form with the specimen. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:** Varies Varies
CPT Code Information: 81408

**Feather Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**Febrile Seizure Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81404; 81405 x 2; 81407; 81479;

**Fecal Leukocytes**


**Specimen Minimum Volume:** NA

**Transport Temperature:**
Fecal Ambient (preferred) 21 days
Refrigerated 21 days

CPT Code Information: 89055

**Fecal Occult Blood, Colorectal Cancer Screen, Qualitative, Immunochemical**

**Specimen Requirements:** Supplies: T682 Fecal Occult Blood Test Kit Container/Tube: Fecal Occult Blood Test Kit (T682) Specimen Volume: Sample must fill the grooved portion of the sample probe Collection Instructions: 1. Collect a random stool specimen. 2. See Fecal Occult Blood Test Kit (T682) package insert for instructions. 3. Specimen must be collected in specific sample vial within 4 hours of defecation.

**Specimen Minimum Volume:** Sample must cover the entire grooved portion of the sample probe.

**Transport Temperature:**
Fecal Refrigerated (preferred) 30 days
Ambient 15 days
FELBA
Felbamate (Felbatol), Serum
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. Centrifuge and separate serum from cells or gel within 2 hours of draw.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

FESE
Fennel Seed, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

FNTSX
Fentanyl and Metabolite, Chain of Custody, Serum
Specimen Requirements: Container/Tube: Red top; Chain-of-Custody Kit (T282) containing the specimen seals and documentation required. Specimen Volume: 2.3 mL Collection Instructions: Spin down within 2 hours of draw.
Specimen Minimum Volume: 1.25 mL
Transport Temperature:
Serum Red Frozen (preferred) 14 days
Refrigerated 14 days
Ambient 72 hours

CPT Code Information: 80299

CPT Code Information: 82274; G0328-Government payers (if appropriate);
**Fentanyl Screen with Reflex, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order FENTX / Fentanyl with Metabolite Confirmation, Chain of Custody, Urine. 2. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine. 3. For additional information, refer to ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

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**Fentanyl Screen, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order FENTX / Fentanyl with Metabolite Confirmation, Chain of Custody, Urine. 2. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine. 3. For additional information, refer to ADULU / Adulterants Survey, Urine or ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

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**Fentanyl with Metabolite Confirmation, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.1 mL

**Transport Temperature:**
FENTU 89655

**Fentanyl with Metabolite Confirmation, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order FENTX / Fentanyl with Metabolite Confirmation, Chain of Custody, Urine. 4. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 5. Submitting less than 3 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
Frozen 14 days
Ambient 72 hours

**CPT Code Information:** 80354; G0480 (if appropriate);

FENTS 89654

**Fentanyl, Serum**

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2.3 mL Collection Instructions: 1. Spin down and remove serum from red blood cells within 2 hours of draw. 2. Aliquot serum to submission container.

**Specimen Minimum Volume:** 1.25 mL

**Transport Temperature:**
Serum Red Frozen (preferred) 28 days
Refrigerated 14 days
Ambient 72 hours

**CPT Code Information:** 80354; G0480 (if appropriate);

FEEP 82143

**Ferret Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**FERR 88153**

**Ferritin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FECHZ 35421**

**Ferrochelatase (FECH) Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions. 

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**
- Varies Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**FMB 88841**

**Fetomaternal Bleed, Flow Cytometry, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: Full tube Collection Instructions: 1. Do not centrifuge or aliquot. 2. Invert several times to mix blood. 3. Send specimen in original tube.
**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Whole Blood EDTA Refrigerated (preferred) 5 days  
Ambient 5 days  

**CPT Code Information:** 88184-Flow cytometry, cell surface, cytoplasmic

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**Fetomaternal Bleed, New York**  
**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: Full tube Collection Instructions: 1. Do not centrifuge or aliquot. 2. Invert several times to mix blood. 3. Send specimen in original tube.  
**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Whole Blood EDTA Refrigerated (preferred) 5 days  
Ambient 5 days  

**CPT Code Information:** 88184-Flow cytometry; cell surface cytoplasmic

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**FGFR1 (8p11.2) Amplification, FISH, Tissue**  
**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide  
**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.  
**Transport Temperature:**  
Tissue Ambient (preferred)  
Refrigerated  

**CPT Code Information:** 88271x2, 88291 DNA probe, each (first probe set), Interpretation and report; 88271x2 DNA probe, each; each additional probe set (if appropriate); 88271x1 DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**FGFR1 (8p11.2) Rearrangement, FISH**  
**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be...
compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**FGFR2 (10q26.1) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Volume: Four consecutive, unstained, 5-micron thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron- thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**Fibrillary Glomerulonephritis Confirmation, Paraffin, LC-MS/MS**

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554) Specimen Type: Formalin-fixed or B5-fixed, paraffin-embedded tissue block Container/Tube: Pathology Packaging Kit Collection Instructions: 1. Do not send fixed tissue slides. Testing can only be done on paraffin-embedded tissue blocks. 2. Attach the green pathology address label included in the kit to the outside of the transport container.
Transport Temperature:
AMYLOID Ambient
(preferred)
Refrigerated

CPT Code Information: 82542; 88380;

FGAZ 35423
Fibrinogen Alpha-Chain (FGA) Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 81479-Unlisted molecular pathology procedure

FIBAG 64605
Fibrinogen Antigen, Plasma

Specimen Requirements: Collection Container/Tube: Light-blue top (3.2% sodium citrate at 9:1 ratio) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Na Cit Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 72 hours

CPT Code Information: 85385

FIBTP 40937
Fibrinogen, Plasma

Specimen Requirements: Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down, remove plasma and spin plasma again. Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Na Cit  Frozen (preferred)  14 days
Ambient  24 hours

CPT Code Information: 85384

FIBC
80343

Fibrinogen, Plasma

Specimen Requirements: Only orderable as part of a profile. For more information, see: BDIAL / Bleeding Diathesis Profile, Limited PROCT / Prolonged Clot Time Profile THRMP / Thrombophilia Profile

Transport Temperature:
Plasma Na Cit  Frozen  14 days

CPT Code Information: 85384

FIBR
8482

Fibroblast Culture

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient/Refrigerated Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated/Ambient

Transport Temperature:
Tissue Varies

CPT Code Information: 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

CULFB
35257

Fibroblast Culture for Genetic Testing

Specimen Requirements: Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Autopsy Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 4-mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer the chorionic villi specimen to a Petri dish containing transport medium (T095). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Type: Products of conception or stillbirth Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 1 cm³ of placenta (including 20 mg of chorionic villi) and a 1 cm³ biopsy specimen of muscle/fascia from the thigh Collection Instructions: If a fetus cannot be specifically identified, collect 50 mg villus material or tissue that appears to be of fetal origin. Additional Information: Do not send entire fetus. Specimen Type: Skin biopsy
Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 4-mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis.

**Transport Temperature:**
- Tissue Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88233; 88240;

**FGF23 88662**

**Fibroblast Growth Factor 23 (FGF23), Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 90 days
- Refrigerated 14 days

**CPT Code Information:** 83520

**FGFRC 71483**

**Fibroblast Growth Factor Receptor 1 (FGFR1) IHC, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**PRKAF 64777**

**Fibrolamellar Carcinoma, 19p13.1 (PRKACA) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Slides/Slide Count: Three consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.
**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271x2-DNA probe, each; each additional probe set (if appropriate); 88271x1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274-w/modifier 52 -Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**FIBRO 38292**

**FibroTest-ActiTest, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 3 mL Collection Instructions: Centrifuge and aliquot within 2 hours of collection.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 7 days
  - Frozen 14 days
  - Ambient 24 days

**CPT Code Information:** 81596; ; OR; 82172; 83883; 83010; 84460; 82977; 82247;

**FIGE 57916**

**Fig (Ficus carica) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

**FFAG4 57875**

**Filaria IgG4 Antibody, ELISA**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.2 mL serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.1 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
    Frozen            30 days
    Ambient          7 days

**CPT Code Information:** 86682

**FIL 9232**

**Filaria, Blood**

**Specimen Requirements:** Container/Tube: Light-blue top (sodium citrate) Specimen Volume: 4.5 mL Collection Instructions: Certain of the microfilariae have a nocturnal periodicity, and the blood specimen is best taken at night between 10 p.m. and 2 a.m.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Whole Blood Na Cit  Ambient (preferred) 72 hours
    Refrigerated    72 hours

**CPT Code Information:** 87015; 87210;

**FINCH 82146**

**Finch Feathers, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
    Frozen            90 days

**CPT Code Information:** 86003

**FANT 82698**

**Fire Ant, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
    Frozen            90 days
CPT Code Information: 86003

**Firebush (Kochia), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
  - Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

CPT Code Information: 86003

**First Trimester Maternal Screen**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: Collection tubes should be centrifuged within 2 hours of collection. Additional Information: 1. Blood draw and ultrasound must be completed between 10 weeks, 0 days and 13 weeks, 6 days, which corresponds to a crown-rump length (CRL) range of 31 to 80 mm. 2. Initial or repeat testing is determined in the laboratory at the time of report and will be reported accordingly. To be considered a repeat test for the patient, the testing must be within the same pregnancy and trimester, with interpretable results for the same test and both tests are performed at Mayo Clinic.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
  - Serum Refrigerated (preferred) 7 days
  - Frozen 90 days

CPT Code Information: 81508-Fetal congenital abnormalities, biochemical assays of two proteins (PAPP-A, hCG [any form]), utilizing maternal serum, algorithm reported as a risk score

**Fish and Shellfish Panel IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
  - Serum Refrigerated (preferred) 7 days
  - Frozen 365 days
  - Ambient 7 days

CPT Code Information: 86001 x 12
**FLEC 9243**

**Flecainide, Serum**

**Specimen Requirements:** Sample must be centrifuged and serum aliquoted off within 2 hours of draw. Container/Tube: Red top Specimen Volume: 3 mL

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Red: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 80299

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**FLG 35426**

**FLG Gene, Mutation Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen

**Specimen Type:** Whole blood

**Specimen Type:** Cultured fibroblasts

**Specimen Type:** Skin biopsy

**Specimen Minimum Volume:** Blood: 1 mL

**Transport Temperature:**
- Varies

**CPT Code Information:**
- 81401-FLG (filaggrin) (eg, ichthyosis vulgaris), common variants (eg, R501X, 2282del4, R2447X, S3247X, 3702delG ;
- 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

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**FLI1 70432**

**FLI-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY: Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**FLNDR**

**Flounder (Bothidae/Pleuronectidae Fam) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**80997**

**Flow Cytometry, Cell Surface, First (Bill Only)**

**Specimen Requirements:** Only orderable by internal pathology clients. This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

**CPT Code Information:** 88184

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**FLT**

**FLT3 Mutation Analysis, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Peripheral blood
  - Container/Tube: EDTA (lavender top) or ACD (yellow top)
  - Specimen Volume: 3 mL
  - Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood.
  - Specimen Stability: Ambient (preferred)/Refrigerate
- Bone marrow
  - Container/Tube: EDTA (lavender top) or ACD (yellow top)
  - Specimen Volume: 2 mL
  - Instructions: 1. Invert several times to mix bone marrow. 2. Send specimens in original tube. 3. Label specimen as bone marrow.
  - Specimen Stability: Ambient (preferred)/Refrigerate
- Extracted DNA from blood or bone marrow
  - Container/Tube: 1.5- to 2-mL tube
  - Specimen Volume: Entire specimen
  - Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of DNA.
  - Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** Blood, Bone Marrow: 0.5 mL; Extracted DNA from blood or bone marrow

**Transport Temperature:**
- Varies
- Varies 7 days

**CPT Code Information:** 81245-FLT3 ITD mutation detection. CPT Code Description: FLT3 (fms-related tyrosine kinase) (eg, acute myeloid leukemia), gene analysis, internal tandem duplication (ITD) variants (ie, exons 14, 15); 81246-FLT3 (fms-related tyrosine kinase 3) (eg, acute myeloid leukemia), gene analysis; tyrosine kinase domain (TKD) variants (eg, D835, I836);

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**FFLUC**

**Fluconazole (Diflucan)**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Container/Tube: Agar slant or other appropriate media. Specimen Volume: Organism in pure culture. Complete and submit with specimen: Fungus Testing Lab request form. Collection Instructions: 1. Organism must be in pure culture, actively growing. 2. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance.

**Transport Temperature:**

Varies Ambient

**CPT Code Information:** 84999 - Unlisted Chemistry Procedure (Refer to patient report to apply the appropriate CPT code in place of this unlisted CPT code based on specimen source.); 87188 - mould - MIC microdilution or agar dilution (if appropriate); 87186 - yeast - MIC microdilution or agar dilution (if appropriate); 87187 - mould or yeast - MLC microdilution or agar dilution (if appropriate);

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**Flunitrazepam Confirmation, Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

Varies Refrigerated (preferred) 14 days  
Frozen 365 days  
Ambient 48 hours

**CPT Code Information:** 80346

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**Fluoride, Plasma**

**Specimen Requirements:** Collection Container/Tube: Green top (sodium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 3 mL

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**

Plasma Heparin Refrigerated (preferred) 14 days  
Ambient 14 days  
Frozen 14 days

**CPT Code Information:** 82735

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**Fluoxetine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: Spin down and separate serum from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

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*Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com*
**Serum**

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**CPT Code Information:** 80299

**PROLX** 80458

**Fluphenazine (Prolixin), Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80342

**FFLUR** 90091

**Flurazepam (Dalmane) and Desalkylflurazepam**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma frozen in plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum frozen in plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Frozen 180 days

**CPT Code Information:** 80346

**17BFP** 89739

**Fluticasone 17-Beta-Carboxylic Acid, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Urine Frozen (preferred) 14 days
  - Refrigerated 72 hours
  - Ambient 24 hours
CPT Code Information: 80299

**FFVOX**

**Fluvoxamine (Luvox)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top sodium heparin tube(s), plasma gel tube is not acceptable. Spin down and send 3mL of plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen: 180 days
  - Ambient: 72 hours

CPT Code Information: 80332

**IAPC**

**FNA Immediate Adequacy (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

CPT Code Information: 88172

**IAAPC**

**FNA Immediate Adequacy Add'l (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

CPT Code Information: 88177

**G122**

**Focal Epilepsy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81404; 81405 x 2; 81406; 81407; 81479

**PGXFP**

**Focused Pharmacogenomics Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole
blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit (T786: fees apply) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Additional Information: Due to lower concentration of DNA yielded from saliva, testing cannot proceed to reflex testing for 2D6 sequencing and will stop after initial testing is complete. Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

Specimen Minimum Volume: Blood: 1 mL Saliva: 1 swab

Transport Temperature: Varies Varies

CPT Code Information: 0029U; 2D6S1-2D6S6 reflex tests; 0071U-0076U (if appropriate);

FOL 9198

Folate, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Fasting (8 hours) 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: Do not order on patients who have recently received methotrexate or other folic acid antagonists.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:

Serum Refrigerated (preferred) 7 days

Frozen 90 days

CPT Code Information: 82746

FSHB 70433

Follicle Stimulating Hormone, Beta Subunit (Beta FSH)

Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:

TECHONLY Ambient (preferred)

Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

FSH 602753

Follicle-Stimulating Hormone, Serum
**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: Specimen should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 180 days
- Ambient 24 hours

**CPT Code Information:** 83001

**FOOD6**

**Food Panel**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FDP1**

**Food Panel #2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FFPG4**

**Food Panel IgG4 (532)**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
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**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FOOD1**

**Food-Nut Panel # 2**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel
- Specimen Volume: 0.5 mL
- Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FOOD7**

**Food-Seafood Panel**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel
- Specimen Volume: 0.5 mL
- Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FOOD3**

**Food-Vegetable Panel**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel
- Specimen Volume: 0.5 mL
- Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FRMH**

**Formaldehyde, IgE**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 435
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FORAC 75402**

**Formic Acid, Serum**

**Specimen Requirements:** Draw blood in a red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 2 mL of serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 30 days
- Frozen 90 days
- Ambient 7 days

**CPT Code Information:** 83921

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**FORAU 75405**

**Formic Acid, Urine**

**Specimen Requirements:** Collection Container: Plastic, preservative-free urine container
- Specimen Volume: 3 mL
- Collection Instructions: 1. Collect 3 mL random urine without preservative. 2. Ship frozen in a plastic container.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
- Urine Frozen 90 days

**CPT Code Information:** 82570; 83921; 81002, if appropriate;

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**BFOS 603419**

**FosB, Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated
CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**FOXL2 Mutation Analysis, Tumor**

**Specimen Requirements:** Preferred Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Specimen Type: Tissue Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (norbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology Container/Tube: Cytology slide (direct smears or ThinPrep) Slides: 1 to 2 slides (stained and coverslipped) with a minimum of 5,000 total nucleated cells Collection Instructions: Submit 1 to 2 slides stained and coverslipped Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** See Specimen Required field.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

CPT Code Information: 81479; 88381;

**FOXP1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**FOXP3 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
Foxtail Millet, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Fragile X Syndrome, Molecular Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Prenatal Specimens Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
- Varies

**CPT Code Information:** 81243-FMR1 (fragile 1 mental retardation 1) (eg, fragile X mental retardation) gene analysis; evaluation to detect abnormal (eg, expanded) alleles; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate); ; 81244-FMR1 (Fragile 1 mental retardation1) gene analysis, characterization of alleles (eg, expanded size and methylation status);

Fragile X, Follow up Analysis

**Specimen Requirements:** This is not an orderable test. This follow-up test is added by the laboratory dependent upon on the result of the PCR analysis (FXS / Fragile X Syndrome, Molecular Analysis).

**Transport Temperature:**
CPT Code Information: 81244-FMR1 (Fragile 1 mental retardation1) gene analysis, characterization of alleles (eg, expanded size and methylation status)

**FRANC**

**91552**

**Francisella Tularensis Antibody**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum ambient in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL; Peds 0.075 mL

**Transport Temperature:**

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CPT Code Information: 86000

**NEFA**

**8280**

**Free Fatty Acids, Total, Serum**

**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours). 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down within 45 minutes of draw. 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

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CPT Code Information: 82725

**FRTUP**

**62583**

**Free Thyroxine Index (FTI), Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

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CPT Code Information: 84479-Thyroxine binding capacity(TUP); 84436-Thyroxine total (T4S);
**Free-Living Amebae, Molecular Detection, PCR, Spinal Fluid, Fresh and Paraffin Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Specimen Type: Cerebrospinal fluid Container/Tube: Sterile container Specimen Volume: 0.5 mL
  Collection Instructions: Send vial #2.
- Specimen Type: Tissue: Fresh Sources: Brain, skin, lung Container/Tube: Sterile container Specimen Volume: 5-10 mm
  Collection Instructions: Submit tissue in a sterile container with 1 mL of sterile saline or minimal essential media (MEM).
- Specimen Type: Tissue: Formalin-fixed paraffin-embedded (FFPE) Sources: Brain, skin, lung Container/Tube: Sterile container Specimen Volume: 5-10 mm
  Collection Instructions: Cut tissue into five 10-micron sections and place in a sterile container.

**Specimen Minimum Volume:**
- CSF: 0.3 mL
- Tissue: 5 mm biopsy

**Transport Temperature:**
- Varies
- Refrigerated 7 days

**CPT Code Information:** 87798 x 3

**Friedreich Ataxia Repeat Expansion Analysis - Unknown Mutation**

**Specimen Requirements:** Collect EDTA (lavender-top) tube. Ship ambient. Adults/Children 3 - 5 mL; Infant 3 mL
- Note: Completed and submit with specimen - Baylor Molecular form

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Whole Blood EDTA
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 81284

**Friedreich Ataxia, Frataxin, Quantitative, Blood Spot**

**Specimen Requirements:**
- Supplies: Card-Blood Spot Collection (Filter Paper) (T493)
- Specimen Volume: 2 blood spots
- Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is fingerstick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry.
- Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**
- Whole blood
- Ambient (preferred) 30 days
- Frozen 30 days
- Refrigerated 30 days

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**FFRWB 60477**

**Friedreich Ataxia, Frataxin, Quantitative, Whole Blood**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Lavender top (EDTA)
- Acceptable: Green top (sodium or lithium heparin)
- Submission Container/Tube: Plastic vial
- Volume: 2 mL

**Specimen Minimum Volume:** 1.25 mL

**Transport Temperature:**
- Whole blood Frozen (preferred) 70 days
- Ambient 70 days
- Refrigerated 70 days

**CPT Code Information:** 83520

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**PCIFS 11333**

**Frozen section, 1st block (Bill Only)**

**Specimen Requirements:**
- This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88331

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**PCAFS 113334**

**Frozen section, addl blocks (Bill Only)**

**Specimen Requirements:**
- This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88332

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**FRUCT 81610**

**Fructosamine, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Volume: 1 mL
- Collection Instructions:
  1. Serum gel tubes should be centrifuged within 2 hours of collection.
  2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
**Serum Refrigerated (preferred)**: 7 days

**Frozen**: 7 days

**Ambient**: 72 hours

**CPT Code Information**: 82985

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**FROS2**

**Fructose, Qualitative, Semen**

**Specimen Requirements**: Patient Preparation: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection. Submit only 1 of the following specimens: Semen Collection Container/Tube: Sterile container Submission Container/Tube: Plastic container Specimen Volume: Total ejaculate Collection Instructions: Do not dilute specimen. Freeze specimen at -20°C. Seminal Plasma Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. After semen collection, wait 30 to 40 minutes until the semen is liquefied, then centrifuge the semen for 10 minutes at maximum centrifuge speed. 2. Remove top 3/4 of specimen with a pipet and place in a plastic vial. 3. Discard remainder of centrifuged specimen.

**Specimen Minimum Volume**: 0.5 mL

**Transport Temperature**: Semen Frozen

**CPT Code Information**: 82757

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**FFPG**

**Fruit Panel IgG**

**Specimen Requirements**: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume**: 1.5 mL

**Transport Temperature**: Serum Refrigerated (preferred) 28 days

**Frozen**: 365 days

**Ambient**: 7 days

**CPT Code Information**: 86001 x16

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**GFDZ**

**FTCD Gene, Full Gene Analysis**

**Specimen Requirements**: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and
streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

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**FBL 50022**

**Fungal Culture, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Green top (heparin) Acceptable: SPS/Isolator tube Specimen Volume: 10-30 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 5 mL Pediatric: 1.5 mL

**Transport Temperature:**
Whole blood Ambient (preferred) 7 days
Refrigerated 7 days

**CPT Code Information:** 87015-Concentration (any type) for infectious agents; 87103-Blood; 87106-Id MALDI-TOF Mass Spec Yeast (if appropriate); 87107-Id MALDI-TOF Mass Spec Fungi (if appropriate); 87106-Yeast identification panel D (if appropriate)87107-Fungal identification panel A (if appropriate) ; 87107-Fungal identification panel B (if appropriate); 87150-Identification rapid PCR coccidioides (if appropriate); 87150 x 2- Identification Histoplasma/Blastomyces, PCR (if appropriate); 87153- D2 fungal sequencing identification (if appropriate);

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**FDERM 87283**

**Fungal Culture, Dermal**

**Specimen Requirements:** Specimen Type: Hair Container/Tube: Sterile container Specimen Volume: 10-12 Collection Instructions: Using forceps collect affected hairs with shaft intact. Specimen Type: Nails Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: 1. Wipe the nail with 70% alcohol using gauze (not cotton). 2. Clip away a generous portion of the affected area. 3. Collect material or debris from under the nail. Specimen Type: Skin Container/Tube: Sterile container Specimen Volume: Entire specimen Collection Instructions: 1. Cleanse the affected area with 70% alcohol. 2. Gently scrape the surface of the skin at the active margin of the lesion, being careful to not draw blood.

**Transport Temperature:**
Varies Ambient 7 days
**CPT Code Information**: 87101-Fungal culture, dermal; 87106-Yeast identification panel D (if appropriate); 87106-Id MALDI-TOF Mass Spec Yeast (if appropriate); 87107-Id MALDI-TOF Mass Spec Fungi (if appropriate); 87107-Fungal identification panel A (if appropriate); 87107-Fungal identification panel B (if appropriate); 87150-Identification rapid PCR coccidioides (if appropriate); 87150 x 2-Identification Histoplasma/Blastomyces, PCR (if appropriate); 87153-D2 fungal sequencing identification (if appropriate);

**Fungal Culture, Routine**

**Specimen Requirements**: Specimen Type: Body fluid Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Bone marrow Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Fresh tissue or stool Supplies: Stool Collection Kit, Random (T635) Container/Tube: Sterile container Specimen Volume: Pea sized Collection Instructions: Tissue should be placed in small amount of sterile saline or sterile water. Specimen Type: Respiratory specimen Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Swab Fresh tissue or body fluid is the preferred specimen type instead of a swab specimen. Sources: Dermal, ear, mouth, ocular, throat, or wound Container/Tube: Culture transport swab (noncharcoal) Culturette Specimen Volume: Swab Collection Instructions: 1. Before collecting specimen, wipe away any excessive amount of secretion and discharge, if appropriate. 2. Obtain secretions or fluid from source with sterile swab. 3. If smear and culture are requested or both a bacterial culture and fungal culture are requested, collect a second swab to maximize test sensitivity. Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume**: Bone Marrow or Body Fluid: 1 mL; Respiratory Specimen: 1.5 mL; Tissue: pea-sized piece

**Transport Temperature**: Varies Refrigerated (preferred) 7 days

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**CPT Code Information**: 87102-Fungal culture, routine; 87106-Yeast identification panel D (if appropriate); 87106-Id MALDI-TOF Mass Spec Yeast (if appropriate); 87107-Id MALDI-TOF Mass Spec Fungi (if appropriate); 87107-Fungal identification panel A (if appropriate); 87107-Fungal identification panel B (if appropriate); 87107-Yeast identification panel A (if appropriate); 87107-Yeast identification panel B (if appropriate); 87150 x 2-Identification Histoplasma/Blastomyces, PCR (if appropriate); 87153-D2 fungal sequencing identification (if appropriate); 87176-Tissue processing (if appropriate);

**Fungal Culture, Vaginal**

**Specimen Requirements**: Specimen Type: Swab Source: Vaginal secretions Container/Tube: Culture transport swab (noncharcoal) Collection Instructions: 1. Before collecting specimen, wipe away any excessive amount of secretion and discharge. 2. Obtain secretions from the mucosal membrane of the vaginal vault with a sterile swab. 3. If smear and culture are requested or both a bacterial culture and fungal culture are requested, collect a second swab to maximize test sensitivity.

**Specimen Minimum Volume**: See Specimen Required

**Transport Temperature**: Varies Refrigerated (preferred) 7 days

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</table>
**CPT Code Information:** 87102-Fungal culture, vaginal; 87106-Id MALDI-TOF Mass Spec Yeast (if appropriate); 87107-Id MALDI-TOF Mass Spec Fungi (if appropriate); 87107-Fungal identification panel A (if appropriate); 87107-Fungal identification panel B (if appropriate); 87150-Identification rapid PCR Coccidioides (if appropriate); 87150 x 2-Identification Histoplasma/Blastomyces, PCR (if appropriate); 87153-D2 fungal sequencing identification (if appropriate);

**Fungal Ident Panel A (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87107

**Fungal Ident Panel B (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87107

**Fungal Sequencing Identification**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87153

**Fungal Smear**

**Specimen Requirements:**

- Specimen Type: Body fluid
- Container/Tube: Sterile container
- Specimen Volume: Entire collection

- Specimen Type: Bone marrow
- Container/Tube: Sterile container
- Specimen Volume: Entire collection

- Specimen Type: Fresh tissue or stool
- Supplies: Stool Collection Kit, Random (T635)
- Container/Tube: Sterile container
- Specimen Volume: Pea sized

**Collection Instructions:**

1. Tissue should be placed in small amount of sterile saline or sterile water.
2. Acceptable Fresh tissue or body fluid is the preferred specimen type instead of a swab specimen.
3. Swab Sources: Dermal, ear, mouth, ocular, throat, or wound

**Specimen Minimum Volume:**

- Bone Marrow or Body Fluid: 1 mL
- Respiratory Specimen: 1.5 mL
- Tissue: pea-sized piece
**Transport Temperature:**
Varies Refrigerated (preferred)  7 days

Ambient  7 days

**CPT Code Information:** 87206; 87176-Tissue processing (if appropriate);

**FUNBL 57873**

**Fungitell, BAL**

**Specimen Requirements:** Specimen Type: BAL Sources: Bronchoalveolar lavage Container/Tube: Sterile container Specimen Volume: 1 – 3 mL Note: Ship frozen

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Lavage Frozen (preferred)  30 days

Refrigerated  7 days

Ambient  4 days

**CPT Code Information:** 87449

**FUNBW 57872**

**Fungitell, bronch wash**

**Specimen Requirements:** Collect 1-3 mL Bronchial Wash in a sterile container, ship frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Bronchial Washing Frozen (preferred)

Refrigerated  7 days

Ambient  4 days

**CPT Code Information:** 87449

**FUNSF 57871**

**Fungitell, CSF**

**Specimen Requirements:** Specimen Type: Spinal Fluid Sources: CSF Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: Collect 2 mL of spinal fluid (CSF) in a sterile container. Ship frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
CSF Frozen (preferred)

Refrigerated  7 days

Ambient  4 days

**CPT Code Information:** 87449
**FUNG**

**Fungitell, Serum**

**Specimen Requirements:** Collect 3-5 mL blood in a serum separator gel tube (SST). Centrifuge specimen within 2 hours. Ship serum gel tube frozen. NOTE: Do not aliquot specimen.

**Specimen Minimum Volume:** 0.5 mL Adults; 0.2 Infants

**Transport Temperature:**
- Serum SST: Frozen (preferred)
- Refrigerated 5 days

**CPT Code Information:** 87449

**FFURO**

**Furosemide (Lasix)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen: 180 days
  - Ambient: 72 hours

**CPT Code Information:** 80375; G0480 (if appropriate);

**FUSI**

**FUS Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FUSM**

**Fusarium moniliforme, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**FFOVE**

**Fusarium oxysporum/vasinfectum IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

**GABA**

**Gabapentin, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 28 days

Ambient 28 days

Frozen 28 days

**CPT Code Information:** 80171

**FGABA**

**Gabapentin, Urine**

**Specimen Requirements:** Collect 10 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 7 days

Frozen 180 days

Ambient 72 hours

**CPT Code Information:** 80307
Gadolinium, 24 Hour, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 83018

Gadolinium, Dermal, Tissue

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free Specimen Vial (T173) Container/Tube: Preferred: Mayo metal-free specimen vial (blue label) (T173) Acceptable: Paraffin block is also acceptable if not more than 1 or 2 cuts have been made to it for slides. Specimen Volume: 5 mg (wet weight) Collection Instructions: 1. 5 mg (wet weight) of tissue from a skin-punch biopsy is required, at least 5 mm in diameter. 2. Any specimen vial other than a Mayo metal-free vial used should be plastic, leached with 10% nitric acid for 2 days, rinsed with redistilled water, and dried in clean air. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: Paraffin blocks will be returned 3 days after analysis.

**Specimen Minimum Volume:** 5 mm (punch) 2.0 mg by dry weight

**Transport Temperature:**
- Dermal Tissue: Refrigerated (preferred) 14 days
- Ambient: 14 days
- Frozen: 14 days

**CPT Code Information:** 83018

Gadolinium, Serum

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (No Additive), 6 mL (T184) Metal Free Specimen Vial (T173) Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 0.8 mL Collection
Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipette into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Ambient 14 days
  - Frozen 14 days

**CPT Code Information:** 83018

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**GDCRU 60428**

**Gadolinium/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 83018-Gadolinium Concentration; 82570-Creatinine Concentration;

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**GATOL 62440**

**Galactitol, Quantitative, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days

**CPT Code Information:** 82542
Galactocerebrosidase, Leukocytes

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood ACD Refrigerated (preferred) 72 hours

**CPT Code Information:** 82658

Galactokinase, Blood

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Green top (sodium heparin), green top (lithium heparin), or yellow top (ACD) Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 10 days

**CPT Code Information:** 82759

Galactose, Quantitative, Plasma

**Specimen Requirements:** Collection Container/Tube: Green top (sodium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Plasma Na Heparin Frozen (preferred) 365 days

**CPT Code Information:** 82760

Galactose, Quantitative, Urine

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 1 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Urine Frozen (preferred) 365 days

**CPT Code Information:** 82658
CPT Code Information: 82760

**GAL1P 80337**

**Galactose-1-Phosphate (Gal-1-P), Erythrocytes**

**Specimen Requirements:**
- Collection Container/Tube: Green top (heparin) Submission Container/Tube: Plastic vial
- Specimen Volume: Washed, packed cells (red cell pellet from step f in Collection Instructions)

Collection Instructions:
1. Collect and process a minimum of 2 mL of whole blood as follows:
   a. Immediately centrifuge for 10 minutes at 650 x G. For conversion to RPMs, see Additional Information.
   b. Discard the plasma and buffy coat layers.
   c. Add a cold 0.9% saline solution to the erythrocytes (about 2 times the volume of erythrocytes).
   d. Mix gently by inversion and centrifuge again for 10 minutes at 650 x G. Remove and discard the saline.
   e. Repeat the wash steps (steps c-e) 2 more times.
   f. After the final centrifugation, remove and discard the saline and a thin layer of the top cells.

Additional Information:
- For infants, collect specimen immediately prior to feeding to avoid postprandial elevations.
- The relative centrifugal force (G-force) can be estimated by applying the following formula: \( g = 11.18 \times r \times (n/1000)^2 \). Where: \( r \) = radius in centimeters and \( n \) = speed in RPM. The radius from the center of the rotation axis to the bottom or outermost portion of the test tube should be used. RCF is expressed relative to the force of the earth’s gravity.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Washed RBC Frozen 29 days

CPT Code Information: 84378

**GALT 8333**

**Galactose-1-Phosphate Uridyltransferase (GALT), Blood**

**Specimen Requirements:**
- Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Green top (sodium heparin) or yellow top (ACD)
- Specimen Volume: 5 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 28 days
  - Ambient 14 days

CPT Code Information: 82775

**GALTP 80341**

**Galactose-1-Phosphate Uridyltransferase Biochemical Phenotyping, Erythrocytes**

**Specimen Requirements:**
- Container/Tube: Lavender top (EDTA)
- Specimen Volume: 3 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 28 days
  - Ambient 14 days
**Galactose-alpha-1,3-galactose (Alpha-Gal) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 82664; 82775;

**Galactosemia Gene Analysis (14-Mutation Panel)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Frozen/Refrigerated Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 86008

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**Galactosemia Reflex, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 5 mL Additional Information: Patient's age is required.

**Specimen Minimum Volume:** 2 mL

**CPT Code Information:** 81401-GALT (galactose-I-phosphate uridylyltransferase) (eg, galactosemia), full gene sequence

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**GAL14**

**55071**

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**FGA13**

**57566**

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Transport Temperature:
Whole Blood EDTA Refrigerated (preferred) 28 days
            Ambient          14 days

CPT Code Information: Galactose-1-Phosphate Uridyltransferase (GALT), Blood; 82775;
Galactosemia Gene Analysis (14-Mutation Panel); 81401-GALT (galactose-1-phosphate
uridylyltransferase) (eg, galactosemia), common variants (eg, Q188R, S135L, K285N, T138M, L195P,

Galectin-3 (GAL3) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
            TECHONLY       Ambient
            (preferred)     Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Galectin-3, Serum

Specimen Requirements: Collection Container/Tube: Red top Submission Container/Tube: Plastic
vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
Serum Red Frozen (preferred) 365 days
            Refrigerated     24 hours

CPT Code Information: 82777-Galectin-3

GALT Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who
have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen
Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable:
Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood.
2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated
Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube:
Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or
Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman
Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection
Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let
blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose
specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry

Specimen Stability Information: Ambient (preferred)/Refrigerated

Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**

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**CPT Code Information:** 81406-GALT (galactose-I-phosphate uridylyltransferase) (eg, galactosemia), full gene sequence

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**WGSEQ 62982 Gamma Globin Full Gene Sequencing, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in the original tube. Specimen Stability: Refrigerate Specimen Type: Extracted DNA from whole blood Container/Tube: 1.5-2mL tube with indication of volume and concentration of DNA Specimen Volume: Entire specimen Collection Instructions: 1. Label specimen as extracted DNA from blood. 2. Write the DNA concentration on the specimen tube. Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** Blood: 1 mL; Extracted DNA: 50 mcL at 50 ng/mcL concentration

**Transport Temperature:**

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**CPT Code Information:** 81479-Unlisted molecular

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**WGSQR 47960 Gamma-Globin Full Gene Sequencing, Varies**

**Specimen Requirements:** Only orderable as a reflex. For more information see: -HAEVP / Hemolytic Anemia Evaluation -HBEVC / Hemoglobin Electrophoresis Cascade, Blood -MEVP / Methemoglobinemia Evaluation -REVE / Erythrocytosis Evaluation THEVP / Thalassemia and Hemoglobinopathy Evaluation

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

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**CPT Code Information:** 81479- Unlisted molecular

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**GGT 8677 Gamma-Glutamyltransferase (GGT), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Submission Container/Tube: Aliquot tube  
Specimen Volume: 0.5 mL  
Collection Instructions: Centrifuge and aliquot within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 365 days  
Ambient 7 days

**CPT Code Information:** 82977

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FGHSP 58034  
**Gamma-Hydroxybutyric Acid (GHB), Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL of sodium heparin plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**  
Varies Refrigerated (preferred) 7 days  
Frozen 180 days  
Ambient 72 hours

**CPT Code Information:** 80307

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FGHSU 58036  
**Gamma-Hydroxybutyric Acid (GHB), Urine**

**Specimen Requirements:** Collect 10 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**  
Urine Refrigerated (preferred) 14 days  
Frozen 180 days  
Ambient 72 hours

**CPT Code Information:** 80307

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GANC 80140  
**Ganciclovir, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial  
Specimen Volume: 1 mL  
Collection Instructions: 1. Serum for a peak level should be drawn 30 to 60 minutes after dosing. Serum for a trough level should be drawn no more than 30 minutes before the next dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.3 mL
Transport Temperature:
Serum Red Frozen (preferred) 28 days
Refrigerated 14 days
Ambient 7 days

CPT Code Information: 80299

FGAGM
Ganglioside (Asialo-GM1, GM1, GM2, GD1a, GD1b, and GQ1b) Antibodies
Specimen Requirements: Draw blood in a serum gel tube(s). Spin down and send 1 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Serum SST Refrigerated (preferred) 14 days
Frozen 365 days

CPT Code Information: 83516 x 5

GM1B
Ganglioside Antibody Panel, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Frozen (preferred) 14 days
Refrigerated 14 days

CPT Code Information: 83516 x 6

FGQ1B
Ganglioside GQ1b Antibody (IgG), EIA
Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial. Note: Overnight fasting is preferred.
Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 21 days
Ambient 7 days

CPT Code Information: 83520
Garlic IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

Garlic, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Gastrin Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Gastrin, Serum

**Specimen Requirements:** Patient Preparation: 1. Fasting (8 hours) required 2. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. If multiple specimens are drawn, submit each vial under a separate order. 2.
Label specimens with corresponding draw time.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 24 hours

**CPT Code Information:** 82941

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**Gastrointestinal Pathogen Panel, PCR, Feces**

**Specimen Requirements:** Supplies: C and S Vial (T058) Specimen Type: Preserved stool Container/Tube: Cary-Blair transport system is required. Specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S [T058]). Submit sample in original Cary Blair medium container (not an aliquot). Specimen Volume: 1 gram or 5 mL Collection Instructions: 1. Collect fresh stool and place in preservative within 2 hours of collection. 2. Submit a representative portion of stool in container with transport medium.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Fecal Ambient (preferred) 4 days
- Refrigerated 4 days

**CPT Code Information:** 87507

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**GATA Binding Protein 3 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**GATA-Binding Protein 2 (GATA2) Comprehensive Gene Sequencing**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell
pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts
Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional
Information: Indicate the tests to be performed on the fibroblast culture cells. Specimen Stability
Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies:
Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell
culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1%
penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum
essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch
Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An
additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability
Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top
tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100
mcL at a concentration of 250 ng/ml 2. Include concentration and volume on tube. Specimen Stability
Information: Frozen (preferred)/Ambient/Refrigerated

Specimen Minimum Volume: Whole blood: 1 mL
Transport Temperature:
Varies

CPT Code Information: 81479

GATA-Binding Protein 3 Immunostain, Bone Marrow, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained
positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed,
decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded
bone marrow tissue block.

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Gaucher Disease, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who
have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type:
Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any
anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2.
Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated
Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75
or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours
Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile
container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution
should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request
(Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume:
4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood
spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection
card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient over 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81479; Fibroblast Culture for Genetic Test; 88233-if appropriate; 88240-if appropriate;

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**Gaucher Disease, Mutation Analysis, GBA**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Prenatal Specimen Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
Varies

**CPT Code Information:** 81251-GBA (glucosidase, beta, acid) (eg, Gaucher disease) gene analysis, common variants (eg, N370S, 84GG, L444P, IVS2+IG>A); Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

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**GCDFP-15 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained

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Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FGPE 57919 Gelatin Porcine IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days  
Frozen 365 days  
Ambient 28 days

**CPT Code Information:** 86003

**GELA 86326 Gelatin, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days  
Frozen 90 days

**CPT Code Information:** 86003

**GSNZ 35448 Gelsolin (GSN) Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Ambient  
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**FGENT**

**Gentamicin in Cerebrospinal Fluid (CSF)**

**Specimen Requirements:** Submit 1 mL of spinal fluid (CSF). Send refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
  - Frozen: 180 days
  - Ambient: 72 hours

**CPT Code Information:** 80170

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**GENPA**

**Gentamicin, Peak, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen: 28 days
  - Ambient: 72 hours

**CPT Code Information:** 80170

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**GENRA**

**Gentamicin, Random, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen: 28 days
  - Ambient: 72 hours

**CPT Code Information:** 80170
**GENTA 37043**

**Gentamicin, Trough, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top

Volume: 0.5 mL

Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80170

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**GERB 82545**

**Gerbil Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel

Volume: 0.5 mL for each 5 allergens requested

Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**GCTF 35270**

**Germ Cell Tumor (GCT), Isochromosome 12p, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue

Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set
GCET 70442

**Germinal Center B-cell Expressed Transcript 1 (GCET1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient

(preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

FGHTL 57902

**Ghrelin Total, Plasma**

**Specimen Requirements:** Collect 10 mL of blood in special tube containing G.I. Preservative (MML supply number T125). Specimen should be separated in refrigerated centrifuge as soon as possible and send 3 - 5 mL plasma frozen. Ship frozen. Patient preparation: 1. Patient should be fasting 10 - 12 hours prior to collection. 2. Patient should not be on any medications or supplements that may influence: Cholecystokinin (CCK), Glucose, Growth Hormone, Insulin and/or Somatostatin levels, if possible for at least 48 hours prior to specimen collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

GI Plasma Frozen (preferred) 180 days

Refrigerated 24 hours

**CPT Code Information:** 83519

GRW 82685

**Giant Ragweed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003
**Giardia Antigen, Feces**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Preserved stool
Supplies: Formalin - Meridian 10% Buffered Neutral (T466); Stool Collection Kit, Random (T635)
Container/Tube: Preferred: Stool container with 10% buffered formalin preservative (T466)
Acceptable: SAF (sodium acetate formalin) Specimen Volume: 5 g
Specimen Stability Information: Ambient (preferred) 60 days
Acceptable: Specimen Type: Unpreserved stool
Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635)
Container/Tube: Stool container (T288) Specimen Volume: 5 g
Specimen Stability Information: Frozen 60 days

**Specimen Minimum Volume:** 2 g

**Transport Temperature:**
Fecal Varies

**CPT Code Information:** 87329

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**Ginger, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 0.5 mL for each 5 allergens requested
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**GIST-Targeted Gene Panel by Next-Generation Sequencing, Tumor**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block
Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Container/Tube: Slides
Specimen Volume: 1 stained and 10 unstained
Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained, non-baked slides with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology Container/Tube: Cytology slide (Direct smears or ThinPrep) Specimen Volume: 1 to 2 slides (stained and coverslipped) with a minimum of 5000 total nucleated cells
Collection Instructions: Submit 1 to 2 slides stained and coverslipped
Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 5 unstained, non-baked slides with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides) and 20% tumor nuclei, 1 stained and coverslipped cytology slide with at least 5,000 total nucleated cells and at least 20% tumor cells

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
**CPT Code Information:** 81272-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (eg, exons 8, 11, 13, 17, 18); 81314-PDGFRA (platelet-derived growth factor receptor alpha polypeptide) (eg, gastrointestinal stromal tumor [GIST]), gene analysis, targeted sequence analysis (eg, exons 12, 18); 88381-Microdissection, manual;

**DGLDN** 89031

**Gliadin (Deamidated) Antibodies Evaluation, IgG and IgA, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Temperature</th>
<th>Days</th>
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</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>21</td>
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<tr>
<td>Frozen</td>
<td>Frozen</td>
<td>21</td>
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**CPT Code Information:** 83516 x 2

**DGGL** 89030

**Gliadin (Deamidated) Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Temperature</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>21</td>
</tr>
<tr>
<td>Frozen</td>
<td>Frozen</td>
<td>21</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 83516

**GFAP**

Glial Fibrillary Acidic Protein (GFAP) Immunostain, Technical

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

<table>
<thead>
<tr>
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<th>Temperature</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>21</td>
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<tr>
<td>Frozen</td>
<td>Frozen</td>
<td>21</td>
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</table>

**CPT Code Information:** 83516
Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 70756

FGLIP
Glipizide (Glucotrol)

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days
  Frozen 180 days
  Ambient 72 hours

CPT Code Information: 80375; G0480 (if appropriate);

LGB3S
Globotriaosylsphingosine, Serum

Specimen Requirements: Patient Preparation: Fasting 12 hours Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 90 days
Refrigerated 24 hours

CPT Code Information: 82542

GBM
Glomerular Basement Membrane Antibodies, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.35 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 83516

**GLUCG 70445**

**Glucagon (GLUC) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**GLP 9358**

**Glucagon, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Fasting 2. Pre-chill tube at 4\(\degree\) C before drawing the specimen. 3. Draw into the pre-chilled tube, and process as follows: a. After drawing specimen, chill tube in wet ice for 10 minutes. b. Centrifuge in a refrigerated centrifuge or in chilled centrifuge cup. c. Immediately after centrifugation, remove plasma, place in a plastic transport vial (T465), and freeze.

**Specimen Minimum Volume:** 0.45 mL

**Transport Temperature:**
Plasma EDTA Frozen 90 days

CPT Code Information: 82943

**GPSY 62236**

**Glucopsychosine, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Card-Postmortem Screening (Filter Paper) (T525) Collection Container/Tube: Preferred: Blood Spot Collection (Filter Paper) (T493) Acceptable: Whatman Protein Saver 903 filter paper, Ahlstrom 226 filter paper, Munktell filter paper, Postmortem Screening (Filter Paper) (T525), or blood collected in tubes containing heparin or EDTA and dried on filter paper Specimen Volume: 2 blood spots Collection Instructions: 1. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 2. At least 1 spot should be complete, (ie, unpunched) 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. 6. Dried blood spots collected with EDTA, sodium heparin, lithium heparin, or ACD B-containing devices are acceptable. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 0.25 mL
**Transport Temperature:**
- Whole blood Ambient (preferred) 96 days
- Frozen 96 days
- Refrigerated 96 days

**CPT Code Information:** 82542

**GPI**

**Glucose Phosphate Isomerase, Erythrocytes**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood ACD-B Refrigerated 20 days

**CPT Code Information:** 84087

**GLUR**

**Glucose, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Add 10 g of boric acid as preservative at start of collection. 2. Collect urine for 24 hours. 3. Mix well before taking 4-mL aliquot. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 82945

**GLBF**

**Glucose, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Indicate specimen source.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Body Fluid Refrigerated 7 days

**CPT Code Information:** 82945

**GLURA**

**Glucose, Random, Serum**
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:  
Serum Refrigerated (preferred) 7 days  
Frozen 30 days

CPT Code Information: 82947

RGLUR 89847

Glucose, Random, Urine

Specimen Requirements: Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

Specimen Minimum Volume: 1 mL

Transport Temperature:  
Urine Refrigerated (preferred) 7 days  
Frozen 7 days

CPT Code Information: 82945

GLSF 152

Glucose, Spinal Fluid

Specimen Requirements: Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:  
CSF Frozen (preferred) 30 days  
Refrigerated 7 days

CPT Code Information: 82945

G6PD 8368

Glucose-6-Phosphate Dehydrogenase (G-6-PD), Quantitative, Erythrocytes

Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 1 mL

Transport Temperature:  
Whole Blood ACD-B Refrigerated 20 days

CPT Code Information: 82955
**Glucose-6-Phosphate Dehydrogenase (G6PD) Full Gene Sequencing**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Saliva Supplies: DNA Saliva Collection Kit (T651) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.45 mL Saliva: Full tube of saliva

**Transport Temperature:**

Varies

**CPT Code Information:** 81249

**Glucotetrasaccharides, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL urine tube (T465) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Urine Frozen (preferred)  87 days
Refrigerated  28 days
Ambient  14 days

**CPT Code Information:** 82542; 82570;

**GLUT-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** N/A

**Transport Temperature:**

TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Glutamic Acid Decarboxylase (GAD65) Antibody Assay, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 86341

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Glutamic Acid Decarboxylase (GAD65) Antibody Assay, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 86341

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Glutamine Synthetase (GS) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** N/A

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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Gluten IgG

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 28 days  
- Frozen 365 days  
- Ambient 7 days  

**CPT Code Information:** 86001

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**GLT**  
82894  
**Gluten, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
- Frozen 90 days  

**CPT Code Information:** 86003

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**TGGB**  
63445  
**Glycerol-Corrected Triglycerides, Serum**  
**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours) 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
- Frozen 60 days  
- Ambient 24 hours  

**CPT Code Information:** 84478

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**GSDP**  
64912  
**Glycogen Storage Disease Panel by Next-Generation Sequencing**  
**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated
Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Prenatal Specimens Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request; Eagle's minimum essential medium with 1% penicillin and streptomycin (T115). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection (Filter Paper) (T493) Specimen Volume: 3 to 5 Blood Spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3, 3-mm diameter Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**

Varies Ambient (preferred)

Frozen

Refrigerated

**CPT Code Information:**

- 81250-G6PC; 81403-NHLRC1; 81404-EPM2A; 81405-LAMP2; 81406 x 4-GAA, PRKAG2, SLC37A4, PYGM; 81479; 81407-AGL; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**GlycoMark**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 1 mL of serum ambient in a plastic vial. Plasma Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 1 mL of EDTA plasma ambient in a plastic vial.

**Specimen Minimum Volume:** 0.75 mL Note: This volume does not allow for repeat testing.

**Transport Temperature:**

Varies Ambient (preferred) 7 days

Refrigerated 7 days

Frozen
CPT Code Information: 84378

GLYCF

Glycophorin A (CD235a) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4 microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Specimen Minimum Volume: N/A

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

GDOM

Glycyphagus domesticus, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

GLYP3

Glypican-3 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-micron thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Specimen Minimum Volume: N/A

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
GNPTZ

GNPTAB Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen preferred to arrive within 96 hours of collection. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

Transport Temperature: Varies Varies

CPT Code Information: 81479-Unlisted molecular pathology procedure code; ; Fibroblast Culture for Genetic Test; ; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); ; 88240-Cryopreservation (if appropriate);

GOAT

Goat Epithelium, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

GMILK

Goat’s Milk, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
GLDR
82717

Goldenrod, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

FGNRH
90165

Gonadotropin Releasing Hormone (Gn-RH)

Specimen Requirements: Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top or serum-gel tube(s). Separate immediately and send 3 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top (EDTA) tube(s). Separate immediately and send 3 mL of EDTA plasma frozen in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma). Patient preparation: Patient should not be on any Steroid, ACTH, Gonadotropin, or Estrogen medications, if possible, for at least 48 hours prior to collection.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Frozen (preferred) 180 days
Refrigerated 7 days

CPT Code Information: 83727

GOOS
82714

Goose Feathers, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
**Gram Stain**

**Specimen Requirements:** Specimen sources: Closed/open abscess, lower respiratory, fluid, tissue, or swab

Supplies: Culturette (BBL Culture Swab) (T092)

Container/Tube: Sterile container or culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092])

Specimen Volume: Entire collection

Acceptable: Slides: Prepared microscope slide

Collection Container/Tube: Sterile container or culture transport swab

Submission Container/Tube: Slide container

Collection Instructions: Apply original sample to surface of standard microscope slide using appropriate application method (determined by consistency of specimen type) to assure adequate transfer of specimen onto slide. Allow specimen to dry and then heat-fix the slide. Place in slide container for transport.

**Transport Temperature:**

- Varies
- Refrigerated (preferred) 24 hours
- Ambient 24 hours

**CPT Code Information:** 87205

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**Gram Stain for Bacterial Vaginosis**

**Specimen Requirements:** Preferred: Specimen Type: Vaginal swab

Collection Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium: T092) or ESwab

Specimen Volume: Entire collection

Acceptable: Specimen Type: Prepared microscope slide

Source: Vaginal swab

Collection Container/Tube: Culturette swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium: T092) or ESwab

Submission Container/Tube: Slide container

Collection Instructions: Apply original sample to surface of standard microscope slide using appropriate application method (determined by consistency of specimen type) to assure adequate transfer of specimen onto slide. Allow specimen to dry and then heat-fix the slide. Place in slide container for transport.

**Transport Temperature:**

- Varies
- Refrigerated (preferred) 7 days
- Ambient 7 days

**CPT Code Information:** 87205

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**Gram-Negative Bacillus Antimicrobial Resistance Genes, PCR Panel**

**Specimen Requirements:** Supplies: Infectious Container, Large (T146) Collection Container/Tube: Slant

Specimen Volume: Isolate

Collection Instructions: 1. Isolate infecting bacteria. 2. Organism must be in pure culture, actively growing. Do not submit mixed cultures. 3. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance. Additional Information: Relevant susceptibility results may be provided (eg, meropenem resistant, ceftepime resistant).

**Transport Temperature:**

- Varies
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87150

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Current as of January 8, 2019 2:39 am CST   800-533-1710 or 507-266-5700 or mayocliniclabs.com
Granulocyte Antibodies, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 1.5 mL Additional Information: Only pretransfusion reaction specimen is acceptable.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 30 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86021

Granzyme B (GRAN B) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Specimen Minimum Volume: N/A

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

Grape IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

Grape, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Grapefruit, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Grass Panel # 1**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Grass Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
**GRAS3**

**Grass Panel # 3**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**GAB1**

**GRB2-Associated Binding Protein 1 (GAB1) Immunostain,**

**Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**GRFE**

**Greek Fennel, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL} \) dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**GCBN**

**Green Coffee Bean, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL} \)
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

### GPEA
**Green Pea, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

### GPEP
**Green Pepper, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

### GSTB
**Green String Bean, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003
CPT Code Information: 86003

ALDR
82671
Grey Alder, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

GRHPZ
35444
GRHPR Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81479-Unlisted molecular pathology procedure

CGAS
62989
Group A Streptococcus (Streptococcus pyogenes) Culture

Specimen Requirements: Submit only 1 of the following specimens: Preferred: Specimen Type: Rectal, perirectal, perianal, or anal Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Additional Information: Primarily to be collected from pediatric patients. Acceptable: Specimen Type: Vaginal Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Additional Information: Submission of a vaginal source is limited to Infection Prevention and Control test orders. Specimen Type: Throat or pharynx Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Additional Information: Submission of throat or pharynx sources is limited to Infection Prevention and Control test orders. Specimen Type: Skin or wound Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Additional Information: Submission of skin or wound sources is limited to Infection Prevention and Control test orders.

CPT Code Information: 86003
orders.

**Transport Temperature:**
Varies Ambient (preferred) 24 hours
Refrigerated 24 hours

**CPT Code Information:** 87081-Strep Grp A (S. pyogenes) culture; 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria identification (if appropriate); 87077-Identification Streptococcus (if appropriate); 87147 x 2-6-Serologic Agglut Method 4 Ident (if appropriate); 87153-Aerobe ident by sequencing (if appropriate);

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**Group B Streptococcus (Streptococcus agalactiae) Culture**

**Specimen Requirements:** Supplies: Culturette (BBL Culture Swab) (T092) Specimen Type: Swab Sources: Vaginal/rectal combination swab Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Additional Information: 1. Vaginal/rectal combination swab is the only acceptable specimen according to Centers for Disease Control and Prevention (CDC) guidelines. Vaginal only, rectal only, or other sources are not acceptable. 2. This assay is used for assessment of carriage of Streptococcus agalactiae (group B streptococcus) in pregnant women.

**Transport Temperature:**
Varies Ambient (preferred) 24 hours
Refrigerated 24 hours

**CPT Code Information:** 87081-Strep Grp B (S. agalactiae) culture; 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria identification (if appropriate); 87077-Identification Streptococcus (if appropriate); 87147 x 2-6-Serologic Agglut Method 4 Ident (if appropriate); 87153-Aerobe ident by sequencing (if appropriate);

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**Grouper IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003

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**Growth Differentiation Factor 15 (GDF15), Plasma**

**Specimen Requirements:** Container/Tube: Preferred: Lavender top (EDTA) plasma Acceptable: Green top (sodium heparin) plasma Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Draw blood into an EDTA or sodium heparin tube and centrifuged immediately. 2. Do not expose specimen to heat or direct sunlight.
**Specimen Minimum Volume:** 0.2 mL  
**Transport Temperature:**  
Plasma Refrigerated (preferred) 90 days  
- Frozen 90 days  
- Ambient 28 days  

**CPT Code Information:** 83520

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**GRH**  
**70444**  
**Growth Hormone (GH) Immunostain, Technical Component Only**  
**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4- microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block  
**Transport Temperature:**  
TECHONLY Ambient (preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**HGH**  
**8688**  
**Growth Hormone, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Fasting 2. If multiple specimens are drawn, submit each vial under a separate order. 3. Label specimens appropriately (corresponding draw time).  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
- Frozen 90 days

**CPT Code Information:** 83003

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**FIRGH**  
**90161**  
**Growth Hormone-Releasing Hormone (GH-RH)**  
**Specimen Requirements:** Submit only 1 of the following specimens: Serum Specimen Type: Serum Container/Tube: Red-top tube, serum gel is acceptable. Specimen volume: 3 mL Collection Instructions: Draw blood in a plain, red-top or serum gel tube(s). Separate immediately and send 3 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Specimen Type: Plasma Container/Tube: Lavender-top (EDTA) tube(s). Specimen volume: 3 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). Separate immediately and send 3 mL of EDTA plasma frozen in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma). Patient preparation Patient should not be on any medications that may influence pituitary secretion.  
**Specimen Minimum Volume:** 1.0 mL
Transport Temperature:
Varies Frozen 365 days

CPT Code Information: 83519

**GGUM 82479**

Guar Gum, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**GUAV 82357**

Guava, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**GUIN 82706**

Guinea Pig Epithelium, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003
GUM Arabic, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
CPT Code Information: 86003

FCGUM Gum Carageenan IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days
CPT Code Information: 86003

FGUMX Gum Xanthan IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days
CPT Code Information: 86003

FHACK Hackberry (Celtis occidentalis) IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Haddock (Melanogrammus aeglefinus) IgE

Specimen Requirements: Draw blood in a plain, red-top tube(s). (Serum gel tube(s) is acceptable.) Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
- Serum Refrigerated (preferred): 28 days
- Frozen: 365 days
- Ambient: 28 days

CPT Code Information: 86003

Haemophilus influenzae Type B Antibody, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
- Serum Refrigerated (preferred): 7 days
- Frozen: 7 days

CPT Code Information: 86684

Hairy Cell Leukemia (DBA44) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
- TECHONLY Ambient
  (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
Hake, Fish, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Halibut IgG

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

Halibut, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Haloperidol, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

**Hamster Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 80173

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**Hantavirus Antibody (IgG, IgM)**

**Specimen Requirements:** Container/Tube: Preferred: Red top tube Acceptable: Serum gel tube Specimen Volume: 0.5 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.50 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86790 x 2

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**Haptoglobin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 83010
Hazelnut-Food, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Hazelnut-Tree, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

HDL Cholesterol Subclasses

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial. Required: Fasting for at least 12 hours. If a cholesterol measurement is to be performed along with other lipid tests, the patient should fast 9 - 12 hours prior to collection.

Specimen Minimum Volume: 1.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 14 days

CPT Code Information: 83701

Heavy Metal Occupational Exposure, with Reflex, Urine

Specimen Requirements: Patient Preparation: Patient should not eat seafood for a 48-hour period prior to start of collection. High concentrations of gadolinium and iodine are known to interfere with
most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 6 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 82175; 82300; 83825; 83655; 82570;

**HMCRU 48549**

**Heavy Metal/Creatinine Ratio, with Reflex, Urine**

**Specimen Requirements:** Patient Preparation: - Patient should not eat seafood for a 48-hour period prior to start of collection. - High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 6 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 82175; 82300; 83825; 83655; 82570;

**HMDB 39183**

**Heavy Metals Screen with Demographics, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original collection tube. Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days
**CPT Code Information:** 82175-Arsenic; 82300-Cadmium; 83655-Lead; 83825-Mercury;

**HMU24 48538**  
**Heavy Metals Screen, with Reflex, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: -High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. -Patient should not eat seafood for a 48-hour period prior to start of collection. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic aliquot container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 82175; 82300; 83825; 83655;

**HMHA 45479**  
**Heavy Metals, Hair**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: Prepare and transport specimen per the instructions in kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. Additional Information: If known, indicate source of hair (axillary, head, or pubic).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**

- Hair Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 82175-Arsenic; 83655-Lead; 83825-Mercury;

**HMNA 31070**  
**Heavy Metals, Nails**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: 1. Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. 2. Clippings should be taken from all 10 fingernails or toenails. Additional Information: If known, indicate source of nails (fingernails or toenails).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**

- Nail Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** 82175-Arsenic; 83655-Lead; 83825-Mercury;

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**HPYL 70466**

**Helicobacter pylori (H pylori) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**HPSA 81806**

**Helicobacter pylori Antigen, Feces**

**Specimen Requirements:** Supplies: Stool Collection Kit, Random (T635) Submission Container/Tube: Plastic container Specimen Volume: 5 g Collection Instructions: Mix stool well. Additional Information: Falsely negative results may be obtained within 2 weeks of treatment with antimicrobials, bismuth, or proton pump inhibitors-see cautions for details.

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

- Fecal Frozen (preferred) 60 days
- Refrigerated 48 hours

**CPT Code Information:** 87338

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**UBT 81590**

**Helicobacter pylori Breath Test**

**Specimen Requirements:** Patient Preparation: 1. Patient should be fasting for 1 hour. 2. Patients should not have taken bismuth/Tritec, antibiotics, proton-pump inhibitors (eg, Prilosec, Prevacid, Aciphex, Protonix, and Nexium) or Pepto-Bismol for 2 weeks prior to testing. If these instructions are not followed, test results may be inaccurate. 3. Histamine 2-receptor antagonists (H[2]RAs) such as Pepcid, Tagamet, Axd, or Zantac should be discontinued for 24 to 48 hours before the BreathTek UBT test is administered. If these instructions are not followed, test results may be inaccurate. 4. Carafate (sucralfate) does not interfere with the test. Use of antacids does not affect the accuracy of this assay. Supplies: H. Pylori Breath Kit (T375: fees apply) Collection Instructions: 1. Do not collect if patient is younger than 3 years of age. 2. Follow instructions included with kit.

**Specimen Minimum Volume:** Bag of "breath" must be full

**Transport Temperature:**

- Breath Ambient 7 days
CPT Code Information: 83013

CAMPY 9388

**Helicobacter pylori Culture**

**Specimen Requirements:** Preferred: Specimen Type: Gastric biopsy Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: Acquire biopsied tissue; moisten with sterile saline. Acceptable: Specimen Type: Gastric brushing or gastric aspirate Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: Aspirate contents with a syringe.

**Specimen Minimum Volume:** 0.5 mL or 0.5 x 0.2 x 0.2-cm sized piece of tissue

**Transport Temperature:**

Varies Refrigerated 48 hours

CPT Code Information: 87081-Helicobacter pylori culture; 87153-Aerobe Ident by Sequencing (if appropriate); 87077-Bacteria identification (if appropriate); 87176-Tissue processing (if appropriate);

HELIS 62769

**Helicobacter pylori Culture with Antimicrobial Susceptibilities, Varies**

**Specimen Requirements:** Preferred: Specimen Type: Gastric biopsy Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: Acquire biopsied tissue; moisten with sterile saline. Acceptable: Specimen Type: Gastric brushings or gastric aspirate Container/Tube: Sterile container Specimen Volume: Entire collection

**Specimen Minimum Volume:** 0.5 mL or 0.5 x 0.2 x 0.2-cm sized piece of tissue

**Transport Temperature:**

Varies Refrigerated 48 hours

CPT Code Information: 87081-Helicobacter pylori culture; 87077-Bacteria identification (if appropriate); 87153-Aerobe Ident by Sequencing (if appropriate); 87176-Tissue processing (if appropriate); 87181-Susceptibility (if appropriate); 87186-Sensitivity, MIC (if appropriate);

HELM 82749

**Helminthosporium halodes, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003
**Helminthosporium sativum/Drechslera IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**Hematologic Disorders, Chromosome Hold, Bone Marrow or Peripheral Blood**

**Specimen Requirements:** Provide a reason for referral with each specimen and bone marrow pathology report (if available). The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not sent via courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 2-3 mL Collection Instructions: 1. It is preferable to send the first aspirate from the bone marrow collection. 2. Invert several times to mix bone marrow. 3. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**

- Varies Ambient
  - (preferred)
- Refrigerated

**CPT Code Information:** See individual reflex tests

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**Hematologic Disorders, DNA and RNA Extract and Hold**

**Specimen Requirements:** Specimen must arrive within 72 hours of draw. Draw and package specimen as close to shipping time as possible. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL

**Transport Temperature:**

- Varies Refrigerated (preferred) 72 hours
CPT Code Information:

**EXHD 64779**

**Hematologic Disorders, DNA Extract and Hold**

**Specimen Requirements:** Specimen must arrive within 168 hours of draw. Draw and package specimen as close to shipping time as possible. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL

**Transport Temperature:**
- Varies Ambient (preferred) 7 days
- Refrigerated 7 days

CPT Code Information:

**HOLDF 35847**

**Hematologic Disorders, Fluorescence In Situ Hybridization (FISH) Hold, Bone Marrow or Peripheral Blood**

**Specimen Requirements:** Provide a reason for referral with each specimen and bone marrow pathology report (if available). The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 2-3 mL Collection Instructions: 1. It is preferable to send the first aspirate from the bone marrow collection. 2. Invert several times to mix bone marrow. 3. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL; Bone Marrow: 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

CPT Code Information: See individual reflex tests

**HLLFH 34854**

**Hematologic Disorders, Leukemia/Lymphoma; Flow Hold, Varies**

**Specimen Requirements:** Due to specimen stability, spinal fluid is not appropriate for this test. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA Specimen Volume: 10 mL Slides: Include 5-
to 10-unstained blood smears, if possible. Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood. Specimen Stability Information: Ambient/Refrigerated <96 hours

Specimen Type: Bone marrow  
Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA  
Volume: 1-5 mL  
Slides: Include 5- to 10-unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens is not required. 2. Label specimen as bone marrow. Specimen Stability Information: Ambient/Refrigerated <96 hours

Specimen Type: Fluid  
Sources: Serous effusions, pleural, pericardial, or abdominal (peritoneal fluid)  
Container/Tube: Body fluid container  
Volume: 20 mL  
Collection Instructions: 1. If possible, fluids should be anticoagulated with heparin (1 U/mL of fluid). 2. The volume of fluid necessary to phenotype the lymphocytes or blasts in serous effusions depends upon the cell count in the specimen. Usually 20 mL of pleural or peritoneal fluid is sufficient. 3. Label specimen with fluid type. Specimen Stability Information: Refrigerated/Ambient <72 hours

Supplies: Hank's Solution (T132)  
Specimen Type: Tissue  
Container/Tube: Sterile container with 15 mL of tissue culture medium (eg. Hank's balanced salt solution [T132], RPMI, or equivalent)  
Volume: 5 mm(3) or larger biopsy  
Collection Instructions: 1. Send intact specimen (do not mince). 2. Specimen cannot be fixed. Specimen Stability Information: Ambient/Refrigerated <96 hours

**Specimen Minimum Volume:**  
Blood: 3 mL  
Bone Marrow: 1 mL  
Fluid: 5 mL  
Tissue: 1 mm(3) or larger biopsy

**Transport Temperature:**  
Varies

**CPT Code Information:**  
88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker;  
88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each);  
88187-Flow Cytometry Interpretation, 2 to 8 Markers (if appropriate);  
88188-Flow Cytometry Interpretation, 9 to 15 Markers (if appropriate);  
88189-Flow Cytometry Interpretation, 16 or More Markers (if appropriate);

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**Hematologic Neoplasms, TP53 Somatic Mutation, DNA Sequencing Exons 4-9**

Specimen Requirements: Submit only 1 of the following specimens:  
Specimen Type: Blood (preferred)  
Container/Tube: EDTA (lavender top), ACD solution B (yellow top), or Heparin (green top)  
Volume: 10 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability Information: Ambient <96 hours  
Specimen Type: Bone marrow  
Container/Tube: EDTA (lavender top), ACD solution B (yellow top), or Heparin (green top)  
Volume: 3 mL  
Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability Information: Ambient <96 hours

**Specimen Minimum Volume:**  
5 mL peripheral blood  
2 mL bone marrow

**Transport Temperature:**  
Varies Ambient (preferred)  
Refrigerated  
4 days

**CPT Code Information:**  
81405-TP53 (tumor protein 53) (eg, tumor samples), full gene sequence or targeted sequence analysis of >5 exons

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**Hematopathology Consultation, Client Embed**

Specimen Requirements: Information on collecting, packaging, and shipping specimens, is
available in Special Instructions: -Bone Marrow Core Biopsy, Clot, and Aspirate Collection Guideline -Assistance with Bone Marrow Collection  Submit the following specimens: Specimen Type: Bone marrow aspirate slides Container/Tube: Transport in plastic slide holders Preferred: Fresh prep slides made at the time of sample collection Acceptable: Slides made from anticoagulated sample Collection Instructions: 1. Prepare slides of bone marrow aspirate immediately after collection or prepare slides from bone marrow aspirate in EDTA within 2 hours of collection. 2. If bone marrow units are sparse or absent or aspirate is a dry tap, make biopsy touch prep slides. 3. Air dry slides. 4. Send 5 slides unfixed/unstained. 5. Place Parafilm around the slide carriers holding unstained slides to prevent exposure to formalin fumes during transport and place slides in a separate bag apart from any formalin-fixed clot or core biopsy specimens during transport. If using slide carriers, make sure they have not been used to carry fixed slides previously. Specimen Type: Bone marrow aspirate in anticoagulant for possible ancillary testing Container/Tube: EDTA, heparin, and ACD Specimen Volume: 5 mL in EDTA, 2-5 mL in ACD, and 2-3 mL in heparin tube Collection Instructions: 1. Aspirate per standard bone marrow collection procedure. 2. Do not transfer to other tubes or containers. Specimen Type: Bone marrow core biopsy Container/Tube: Fixed biopsy core embedded in paraffin block Collection Instructions: Process and embed core in paraffin. Specimen Type: Bone marrow aspirate clot Container/Tube: Bone marrow clot embedded in paraffin block Collection Instructions: Process and embed clot in paraffin Specimen Type: Peripheral blood slides and CBC Container/Tube: Transport in plastic slide holders. Preferred: Fresh prep fingerstick slide; include CBC values Collection Instructions: 1. Prepare good quality smear of even thickness from fingerstick. 2. Alternately prepare good quality smear from EDTA vial within 8 hours of collection. 3. Submit unstained and unfixed slides.

**Transport Temperature:**

Varies Ambient

**CPT Code Information:** 88321 (if appropriate); 88323 (if appropriate); 88325 (if appropriate); 85007 (if appropriate); 85060 (if appropriate); 85097 (if appropriate); 88305 (if appropriate); 88311 (if appropriate); 85007 (if appropriate); 85060 (if appropriate); 85097 (if appropriate); 88305 (if appropriate); 88311 (if appropriate); 88321 (if appropriate); 88323 (if appropriate); 88325 (if appropriate); 85007 (if appropriate); 85060 (if appropriate); 85097 (if appropriate); 88305 (if appropriate); 88311 (if appropriate);
**Hemochromatosis HFE Gene Analysis, Blood**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81256-HFE (hemochromatosis) (eg, hereditary hemochromatosis) gene analysis, common variants (eg, C282Y, H63D)

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**Hemoglobin (Hb) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
Techonly Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Hemoglobin A1c, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Frozen 7 days
- Ambient 24 hours
CPT Code Information: 83036

HBELC
81626

Hemoglobin Electrophoresis Cascade, Blood

Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD (solution B), green top (sodium heparin) Specimen Volume: 10 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 7 days

CPT Code Information: Hemoglobin Electrophoresis Cascade; 83020-Quantitation by electrophoresis; 83021-Quantitation by HPLC; ; IEF Confirms; 82664-Electrophoresis, not elsewhere specified (if appropriate); ; Hemoglobin, Unstable, Blood; 83068 (if appropriate); ; Hemoglobin Variant by Mass Spectrometry (MS), Blood; 83789 (if appropriate); ; Hemoglobin F, Red Blood Cell Distribution, Blood; 88184 (if appropriate);

HPFH
8270

Hemoglobin F, Red Cell Distribution, Blood

Specimen Requirements: Only orderable as a reflex. For more information see: -HAEVP / Hemolytic Anemia Evaluation -HBELC / Hemoglobin Electrophoresis Cascade, Blood -MEVP / Methemoglobinemia Evaluation -REVE / Erythrocytosis Evaluation -THEVP / Thalassemia and Hemoglobinopathy Evaluation

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 7 days

CPT Code Information: 88184

SDEX
9180

Hemoglobin S, Screen, Blood

Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD (solution B), heparin Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 7 days

CPT Code Information: 85660

HGBCE
65039

Hemoglobin Variant, A2 and F Quantitation, Blood

Specimen Requirements: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: ACD, heparin Specimen Volume: 4 mL Collection Instructions: 1. Submit fresh specimen. 2. Do not transfer blood to other containers.

Specimen Minimum Volume: 1 mL
Transport Temperature:
Whole Blood EDTA  Refrigerated 10 days

CPT Code Information: 83020-Quantitation by Electrophoresis

Hemoglobin, Blood
Specimen Minimum Volume: 1 mL
Transport Temperature:
Whole Blood EDTA  Refrigerated (preferred) 48 hours
Ambient 24 hours

CPT Code Information: 85018

Hemoglobin, Qualitative, Urine
Specimen Requirements: Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: Collect a random urine specimen.
Specimen Minimum Volume: 1 mL
Transport Temperature: Urine Refrigerated 72 hours

CPT Code Information: 81002

Hemolytic Anemia Evaluation
Specimen Requirements: Two whole blood EDTA specimens, 2 whole blood ACD specimens, an EDTA control specimen, and 2 well-made peripheral blood smears (Wright stained or fixed in absolute methanol) are required for testing. Patient: Specimen Type: Blood Container/Tube: Lavender top (EDTA) and yellow top (ACD) Specimen Volume: EDTA: Two 4-mL vials ACD: Two 6-mL vials Collection Instructions: 1. Immediately refrigerate specimens after draw. 2. Send specimens in original tubes. Do not aliquot. 3. Prepare smears. 4. Rubber band patient specimen and control vial together.
Patient: Specimen Type: Slides Container/Tube: Blood smears Specimen Volume: 2 well-made peripheral blood smears Collection Instructions: Collect 2 well-made peripheral blood smears (Wright stained or fixed in absolute methanol). Shipping Normal Control: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated, nonsmoking person at the same time as the patient. 2. Label clearly on outermost label normal control. 3. Immediately refrigerate specimen after draw. 4. Send specimen in original tube. Do not aliquot. 5. Rubber band patient specimen and control vial together.
Specimen Minimum Volume: EDTA Blood: 3 mL ACD Blood: 5 mL
Transport Temperature:
Control Refrigerated 72 hours
Whole Blood ACD-B Refrigerated 72 hours
Whole Blood EDTA  Refrigerated 72 hours

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
CPT Code Information: Hemolytic Anemia Evaluation; 82657-Hexokinase, B; 82955-G-6-PD; 83020-Hemoglobin electrophoresis; 83021-Hemoglobin A2 and F; 83068-Hemoglobin stability; 84087-Glucose phosphate isomerase; 84220-Pyruvate kinase; 85060-Morphology review; 85557-Osmotic fragility; Band 3 Fluorescence Staining, RBC; 88184; Reflected RBC Enzymes; 83915 (if appropriate); Glutathione, Blood; 82978 (if appropriate); Hemoglobin F, Red Cell Distribution, Blood; 88184 (if appropriate);

F8INP
66206

Hemophilia A F8 Gene, Intron 1 and 22 Inversion Mutation Analysis, Amniotic Fluid or Chorionic Villus Sampling

Specimen Requirements: Advise Express Mail or equivalent if not on courier service. Results will be reported and also telephoned or faxed, if requested. Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Submit only 1 of the following specimens: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 5-10 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. 2. Discard the first 2 mL of amniotic fluid. If the culture will be performed in conjunction with chromosome analysis and alpha-fetoprotein, a total of approximately 25 mL to 30 mL will be needed for the combined studies. Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Additional Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer the chorionic villi specimen to a Petri dish containing transport medium (T095). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Stability Information: Refrigerated (preferred) <24 hours/Ambient Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks approximately 90% confluent Collection Instructions: Submit confluent cultured cells from another laboratory Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Additional Information: There will be no culture charge.

Specimen Minimum Volume: Amniotic fluid: 10 mL Chorionic Villi: 5 mg

Transport Temperature: Varies

CPT Code Information: 81403

F8INV
66205

Hemophilia A F8 Gene, Intron 1 and 22 Inversion Mutation Analysis, Whole Blood

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Sodium citrate Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Each molecular
coagulation test requested must have its own tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole blood  Ambient (preferred) 7 days
- Frozen 7 days
- Refrigerated 7 days

**CPT Code Information:** 81403

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**F81P 88806**

**Hemophilia A F8 Gene, Intron 1 Inversion Known Mutation Analysis, Amniotic Fluid or Chorionic Villus Sampling**

**Specimen Requirements:** Advise Express Mail or equivalent if not on courier service Results will be reported and also telephoned or faxed, if requested. Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Submit only 1 of the following specimens:
- **Specimen Type:** Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 5-10 mL
- **Specimen Type:** Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg

**Specimen Minimum Volume:**
- Amniotic fluid: 10 mL
- Chorionic villi: 5 mg

**Transport Temperature:**
- Amniotic fluid: 10 mL
- Chorionic villi: 5 mg
- Ambien (preferred) Varies
- Refrigerated Varies

**CPT Code Information:** 81403

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**F81B 60555**

**Hemophilia A F8 Gene, Intron 1 Inversion Known Mutation, Whole Blood**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Sodium citrate Specimen Volume: 3 mL

**Collection Instructions:**
1. Invert
several times to mix blood. 2. Send specimen in original tube. Additional Information: Each molecular
test requested must have its own tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole blood  Ambient (preferred)  7 days
Frozen  7 days
Refrigerated  7 days

**CPT Code Information:** 81403

**F822B**

**Hemophilia A F8 Gene, Intron 22 Inversion Known Mutation, Whole Blood**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who
have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top
(ACD) Acceptable: Sodium citrate Specimen Volume: 3 mL Collection Instructions: 1. Invert several
times to mix blood. 2. Send specimen in original tube. Additional Information: Each molecular
coaagulation test requested must have its own tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole blood  Ambient (preferred)  7 days
Frozen  7 days
Refrigerated  7 days

**CPT Code Information:** 81403

**F822P**

**Hemophilia A F8 Gene, Intron 22 Inversion Mutation Analysis, Amniotic Fluid or Chorionic Villus Sampling**

**Specimen Requirements:** Advise Express Mail or equivalent if not on courier service Results will
be reported and also telephoned or faxed, if requested. Due to the complexity of prenatal testing,
consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent
Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed
appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order
MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. Submit only 1 of
the following specimens: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container
Specimen Volume: 5-10 mL Collection Instructions: 1. Optimal timing for specimen collection is during
14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. 2.
Discard the first 2 mL of amniotic fluid. If the culture will be performed in conjunction with chromosome
analysis and alpha-fetoprotein, a total of approximately 25 to 30 mL will be needed for the combined
studies. Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Additional
Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing
material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are
undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt.
Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media
Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or
transcervical method. 2. Transfer the chorionic villi specimen to a Petri dish containing transport medium

**Specimen Volume:** 1 mL

**Transport Temperature:**
Whole blood  Ambient (preferred)  7 days
Frozen  7 days
Refrigerated  7 days

**CPT Code Information:** 81403
Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Stability Information: Refrigerated (preferred) <24 hours/Ambient Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks approximately 90% confluent Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Additional Information: There will be no culture charge.

**Specimen Minimum Volume:** Amniotic fluid: 10 mL Chorionic villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81403

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**Hemophilia B, F9 Gene Known Mutation Analysis, Amniotic Fluid or Chorionic Villus Sampling**

**Specimen Requirements:** Advise Express Mail or equivalent if not on courier service. Results will be reported and also telephoned or faxed, if requested. Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal peripheral blood specimen. A. For the purposes of maternal cell contamination studies (MCC), submit the following specimen type from the mother in addition to 1 of the 3 accepted fetal specimen types: Specimen Type: Peripheral blood Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA or sodium citrate Specimen Volume: 6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated B. For the purposes of prenatal testing of the fetus, submit only 1 of the following specimens: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 5-10 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. 2. Discard the first 2 mL of amniotic fluid. If the culture will be performed in conjunction with chromosome analysis and alpha-fetoprotein, a total of approximately 25 mL to 30 mL will be needed for the combined studies. Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer the chorionic villi specimen to a Petri dish containing transport medium (T095). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Stability Information: Refrigerated (preferred) <24 hours/Ambient Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks approximately 90% confluent Collection Instructions: Submit confluent cultured cells from another laboratory Specimen Stability Information: Ambient (preferred) <24 hours/Refrigerated Additional Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 6. There will be no culture charge.

**Specimen Minimum Volume:** Amniotic fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81403
**Hemophilia B, F9 Gene Known Mutation, Whole Blood**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA or sodium citrate. Specimen Volume: 6 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole blood: Ambient (preferred) 7 days
- Frozen: 7 days
- Refrigerated: 7 days

**CPT Code Information:** 81403-Known familial variant not otherwise specified, for gene listed in Tier 1 or Tier 2, DNA sequence analysis, each variant exon

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**Hemophilia B, F9 Gene Mutation Analysis, Amniotic Fluid or Chorionic Villus Sampling**

**Specimen Requirements:** Advise Express Mail or equivalent if not on courier service. Results will be reported and also telephoned or faxed, if requested. Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal peripheral blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on the maternal specimen. A. For the purposes of maternal cell contamination studies (MCC), submit the following specimen type from the mother in addition to 1 of the 3 accepted fetal specimen types: Specimen Type: Peripheral blood. Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA or sodium citrate. Specimen Volume: 6 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated.

**Specimen Minimum Volume:** Amniotic fluid: 10 mL. Chorionic Villi: 5 mg

**Transport Temperature:** Varies

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**Additional Information:**
1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 6. There will be no culture charge.
**CPT Code Information:** 81238

### FIXMS 84209

**Hemophilia B, F9 Gene Mutation Analysis, Whole Blood**

**Specimen Requirements:**
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)
- Acceptable: Sodium citrate

**Specimen Volume:** 6 mL

**Collection Instructions:**
1. Invert several times to mix blood.
2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole blood: Ambient (preferred) 7 days
- Frozen: 7 days
- Refrigerated: 7 days

**CPT Code Information:** 81238-F9 (coagulation factor IX) (eg, hemophilia B), full gene sequence

### HQ 9220

**HemoQuant, Feces**

**Specimen Requirements:**
- Collection Container/Tube: Spoon-like sampler from kit (T134)
- Submission Container/Tube: Screw-capped tube

**Specimen Volume:** 1 g

**Collection Instructions:**
- Collect random specimen from a single defecation.
- Additional Information: Patient should be instructed to refrain from red meat and aspirin for 3 days prior to specimen collection.

**Specimen Minimum Volume:** 1 g

**Transport Temperature:**
- Fecal: Refrigerated (preferred) 7 days
- Ambient: 7 days
- Frozen

**CPT Code Information:** 84126

### UHSD 8582

**Hemosiderin, Urine**

**Specimen Requirements:**
- Collection Container/Tube: Clean, plastic urine collection container
- Submission Container/Tube: Plastic, 60-mL urine bottle

**Specimen Volume:** 13 mL

**Collection Instructions:**
1. Collect a random urine specimen.
2. No preservative.

**Specimen Minimum Volume:** 12 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 7 days
- Frozen

**CPT Code Information:** 83070

### FWWE 57956

**Hemp Western Water (Acnida tamariscina) IgE**
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**HEPTP 40938**

**Heparin Anti-Xa, Plasma**

**Specimen Requirements:** Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down, remove plasma and spin plasma again Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen (preferred) 14 days
- Ambient 2 hours

**CPT Code Information:** 85520

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**FHPFCF 91658**

**Heparin Cofactor II**

**Specimen Requirements:** Draw blood in a light blue-top (sodium citrate) tube. Spin down and send 1 mL of citrated plasma frozen in a plastic vial. Note: Separate specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.5 mL volume does NOT allow for repeat testing.

**Transport Temperature:**
- Plasma Na Cit Frozen

**CPT Code Information:** 85130

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**HITIG 86533**

**Heparin-PF4 IgG Antibody (HIT), Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Frozen (preferred) 14 days
- Refrigerated 48 hours
Hepatitis A IgG Antibody, Serum

Specimen Requirements:
Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 8 days
Ambient 4 days

CPT Code Information: 86708

Hepatitis A IgM Antibody, Serum

Specimen Requirements:
Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Ambient 72 hours

CPT Code Information: 86709

Hepatitis A Qualitative PCR HAV SuperQual

Specimen Requirements:
Submit only 1 of the following: Plasma Draw blood in a yellow-top (ACD) or purple-top (EDTA) tube(s). Spin down and send 1 mL ACD or EDTA plasma frozen in a plastic vial. Serum Draw blood in a plain red-top tube(s). Serum gel tube(s) is acceptable. Spin down and send 1 mL serum frozen in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Varies Frozen

CPT Code Information: 87798

Hepatitis B Core (HBc) Immunostain, Technical Component Only

Specimen Requirements:
Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** N/A

**Transport Temperature:**

TECHONLY Ambient
(preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**HBIM 9015**

**Hepatitis B Core Antibody, IgM, Serum**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum SST Frozen (preferred)

Refrigerated 7 days

Ambient 24 hours

**CPT Code Information:** 86705

**HBC 8347**

**Hepatitis B Core Total Antibodies, Serum**

**Specimen Requirements:** Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and remove serum from gel within 24 hours.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

Serum SST Frozen (preferred)

Refrigerated 7 days

Ambient 24 hours

**CPT Code Information:** 86704

**CORAB 32111**

**Hepatitis B Core Total Antibodies, with Reflex to Hepatitis B Core Antibody IgM, Serum**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and remove serum from clot within 24 hours.
Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum SST  Frozen (preferred)  30 days
Refrigerated  7 days
Ambient  24 hours

CPT Code Information: 86704-Hepatitis B core total; 86705-Hepatitis B core, IgM (if appropriate);

**HEAB**

**Hepatitis B e-Antibody, Serum**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and remove serum from gel within 24 hours.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum SST  Frozen (preferred)
Refrigerated  7 days
Ambient  24 hours

**CPT Code Information:** 86707

**HEAG**

**Hepatitis B e-Antigen and Hepatitis B e-Antibody, Serum**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Spin down and remove serum from gel within 24 hours.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum SST  Frozen (preferred)
Refrigerated  7 days
Ambient  24 hours

**CPT Code Information:** 86707; 87350;

**EAG**

**Hepatitis B e-Antigen, Serum**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission
Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Spin down and remove serum from gel within 24 hours.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum SST  Frozen (preferred)

Refrigerated  7 days
Ambient     24 hours

CPT Code Information: 87350

HBABY
63137

Hepatitis B Perinatal Exposure Follow-up Panel, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial
Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum SST  Frozen (preferred)  30 days

Refrigerated  7 days
Ambient     24 hours

CPT Code Information: 86706; 86704; 87340; 87341 (if appropriate);

HBABT
87893

Hepatitis B Surface Antibody Monitor, Post-Transplant, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL Collection Instructions: Spin down and remove serum from clot.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum SST  Frozen (preferred)  30 days

Refrigerated  7 days
Ambient     24 hours

CPT Code Information: 86317

HBAB
8254

Hepatitis B Surface Antibody, Qualitative/Quantitative, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum SST  Frozen (preferred)  30 days
HEPBS
70453

Hepatitis B Surface Antigen (HBs) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 86706

HBNTP
35936

Hepatitis B Surface Antigen Confirmation Prenatal, Serum

**Specimen Requirements:** Only orderable as a reflex. For more information see HBAGP / Hepatitis B Surface Antigen Prenatal, Serum. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**

Serum SST Frozen (preferred)
Refrigerated 7 days
Ambient 24 hours

**CPT Code Information:** 87341

HBAGP
86185

Hepatitis B Surface Antigen Prenatal, Serum

**Specimen Requirements:** Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**

Serum SST Frozen (preferred)
Refrigerated 7 days
Ambient 24 hours

**CPT Code Information:** 86185
**Hepatitis B Surface Antigen, Serum**

**Specimen Requirements:** Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer’s instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum SST: Frozen (preferred) 30 days
- Refrigerated: 7 days
- Ambient: 24 hours

**CPT Code Information:** 87340-HBsAg; 87341-HBsAg confirmation (if appropriate);

**Hepatitis B Virus (HBV) DNA Detection and Quantification by Real-Time PCR, Serum**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Serum gel Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer’s instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum SST: Frozen (preferred) 84 days
- Refrigerated: 6 days

**CPT Code Information:** 87517

**Hepatitis B Virus Genotyping**

**Specimen Requirements:** Draw blood in lavender (EDTA) tube(s). Spin down and send 2 mL plasma frozen in a plastic vial. Required: 1. Viral Load 2. Viral Load Date Note: Red-top serum and serum gel tube(s) are acceptable. Note: This test may be unsuccessful if the HBV Viral load is less than log 3.0 or 1,000 IU/mL of plasma.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma EDTA: Frozen (preferred) 42 days
- Refrigerated: 7 days
- Ambient: 72 hours

**CPT Code Information:** 87912
**HBGCD**

**Hepatitis Bs Antigen (HBsAg) for Cadaveric or Hemolyzed Specimens, Serum**

**Specimen Requirements:**
Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Submission Container/Tube: Plastic vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** 87340; 87341 (if appropriate);

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**HCSRN**

**Hepatitis C Antibody Screen with Reflex to HCV RNA by PCR, Serum**

**Specimen Requirements:**

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum SST Frozen (preferred) 30 days
- Refrigerated 5 days

**CPT Code Information:** 86803 and G0472; 87522 (if appropriate);

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**HCVDX**

**Hepatitis C Antibody with Reflex to HCV RNA by PCR, Serum**

**Specimen Requirements:**

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum SST Frozen (preferred) 30 days
- Refrigerated 5 days

**CPT Code Information:** 86803 ; 87522-(if appropriate);

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**FH1N3**

**Hepatitis C Viral RNA Genotype 1 NS3 Drug Resist**

**Specimen Requirements:**
Submit one of the following: Plasma (Preferred) Specimen Type: Plasma Container/Tube: lavender-top EDTA tube or white top (EDTA PPT) tube Specimen Volume: 2 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s) or white top (EDTA PPT) tube(s). Spin down within 2 hours and send 2 mL of EDTA plasma refrigerated in a plastic vial. Serum
Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions:
Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL serum in a screw-capped vial, shipped refrigerate.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days

Frozen 42 days
Ambient 72 hours

CPT Code Information: 87902

FH1N5 75187

Hepatitis C Viral RNA Genotype 1 NS5a Drug Resistance

Specimen Requirements: Please submit one of the following: Plasma: Specimen Type: Plasma (Preferred) Container/Tube: EDTA (lavender-top) tube(s). Specimen volume: 2 mL Collection Instructions: Draw blood in an EDTA (lavender-top) tube(s). (Plasma gel tube is acceptable.) Spin down and send 2 mL plasma refrigerated in a plastic vial. Serum: Specimen Type: Serum Container/Tube: Red-top tube, serum gel is acceptable. Specimen volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 2 mL serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days

Frozen 42 days
Ambient 72 hours

CPT Code Information: 87902

FHEPC 75028

Hepatitis C Viral RNA Genotype 1 NS5b Drug Resistance

Specimen Requirements: Submit only one of the following: Plasma: Draw blood in a (lavender-top) EDTA tube(s). Plasma gel tube is acceptable. Spin down and send 2 mL plasma refrigerated in a plastic vial. Serum: Draw blood in a plain red-top tube(s). Serum gel tube is acceptable. Spin down and send 2 mL serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days

Frozen 42 days
Ambient 72 hours

CPT Code Information: 87902

FH3N5 75188

Hepatitis C Viral RNA Genotype 3 NS5a Drug Resistance

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Submit one of the following: Plasma: Draw blood in a (lavender-top) EDTA tube(s). (Plasma gel tube is acceptable.) Spin down and send 2 mL plasma refrigerated in a plastic vial. Serum: Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 2 mL serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Refrigerated (preferred) 14 days
  - Frozen: 42 days
  - Ambient: 72 hours

**CPT Code Information:** 87902

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**HCVQN 97291**  
**Hepatitis C Virus (HCV) RNA Detection and Quantification by Real-Time Reverse Transcription-PCR (RT-PCR), Serum**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Serum gel Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum SST Frozen (preferred) 84 days
- Refrigerated: 6 days

**CPT Code Information:** 87522

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**HCVL 63063**  
**Hepatitis C Virus Antibody Confirmation, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.4 mL Collection Instructions: Spin down and remove serum from clot within 24 hours.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated: 7 days

**CPT Code Information:** 86804

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**HCCDD 58127**  
**Hepatitis C Virus Antibody in Cadaveric or Hemolyzed Specimens, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL
Transport Temperature:
Serum Frozen (preferred) 28 days
    Ambient          7 days
    Refrigerated     7 days

CPT Code Information: 86803; 86804 (if appropriate);

HCCAD
Hepatitis C Virus Antibody Screen for Cadaveric or Hemolyzed Specimens, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Frozen (preferred) 28 days
    Ambient          7 days
    Refrigerated     7 days

CPT Code Information: 86803; G0472; 86804 (if appropriate);

HCVG
Hepatitis C Virus Genotype, Serum
Specimen Requirements: Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Serum gel Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube. Additional Information: Specimens should contain a recommended minimum HCV viral load of 500 IU/mL.
Specimen Minimum Volume: 1.5 mL
Transport Temperature:
Serum SST Frozen (preferred) 42 days
    Refrigerated     72 hours

CPT Code Information: 87902

HCVQG
Hepatitis C Virus RNA Quantification with Reflex to HCV Genotype, Serum
Specimen Requirements: Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Serum gel Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 3.5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off serum into aliquot tube.
Specimen Minimum Volume: 1.6 mL
Transport Temperature:
Hepatitis D Virus Total Antibodies, Serum


Specimen Minimum Volume: 0.2 mL

Transport Temperature:
Serum Frozen (preferred) 30 days
Refrigerated 30 days

CPT Code Information: 87522

Hepatitis E Virus IgG Antibody, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
Serum SST Frozen (preferred)
Refrigerated 24 hours

CPT Code Information: 86692

Hepatitis E Virus IgM Antibody Confirmation, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
Serum SST Frozen (preferred)
Refrigerated 7 days

CPT Code Information: 86790

Hepatitis E Virus IgM Antibody Screen with Reflex to Confirmation, Serum

Specimen Requirements: Collection Container/Tube: Serum gel Submission Container/Tube:
Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
Serum SST  Frozen (preferred)
Refrigerated  24 hours

**CPT Code Information:** 86790

### HEVQU 62929

**Hepatitis E Virus RNA Detection and Quantification by Real-Time RT-PCR, Serum**

**Specimen Requirements:** Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1.2 mL Collection Instructions: Spin down and separate serum from blood cells within 6 hours of collection.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Serum SST  Frozen (preferred)  35 days
Refrigerated  5 days

**CPT Code Information:** 87798

### HCCPR 62966

**Hepatocellular Carcinoma Risk Panel**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Frozen (preferred)  90 days
Refrigerated  5 days

**CPT Code Information:** 82107-L3AFP; 83951-DCP;

### HEPAT 70456

**Hepatocyte (HEP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated
Hepatocyte Nuclear Factor 1Beta (HNF-1beta) Immunostain,
Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 - x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**HER2 Amplification Associated with Gastroesophageal Cancer, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue

Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:**

- 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
**HER2 Amplification, Miscellaneous Tumor, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Specimen Type: Tissue
  - Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block
- Specimen Type: Slides
  - Specimen Volume: Four consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin (H and E) slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:**
- 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report;
- 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate);
- 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate);
- 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate);
- 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate);
- 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate);
- 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate);
- 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**HER2 Immunostain, Without Interpretation**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
  - Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:**
- 88342-TC, primary; 88341-TC, if additional IHC;

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**HER2, Breast, DCIS, Quantitative Immunohistochemistry, Manual No Reflex**

**Specimen Requirements:** Specimen Type: Preferred: A paraffin-embedded tissue block containing breast cancer tissue that has been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours and shipped at ambient temperature Acceptable: 2 unstained sections, containing breast carcinoma, on charged slides cut at 4 microns less than 1 month ago and shipped at ambient temperature. Tissue on the slides should have been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours. Supplies: Pathology Packaging Kit (T554)
- Container/Tube: Pathology Packaging Kit (T554) Collection Instructions: 1. Submit paraffin-embedded tissue block from ductal carcinoma in situ or solid/intracystic papillary carcinoma breast carcinoma tissue. 2. Paraffin blocks will be returned with final report.

**Specimen Minimum Volume:** Entire block
**Transport Temperature:**
Special Ambient  
(preferred)
Refrigerated

**CPT Code Information:** 88360

**HERDM 70915**

**HER2, Breast, DCIS, Quantitative Immunohistochemistry, Manual with HER2 FISH Reflex**

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554)  
Specimen Type: Preferred: A paraffin-embedded tissue block containing breast cancer tissue that has been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours and shipped at ambient temperature Acceptable: 5 unstained sections containing breast carcinoma on charged slides cut at 4 microns less than 1 month ago and shipped at ambient temperature. Tissue on the slides should have been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours.  
Container/Tube: Pathology Packaging Kit (T554)  
Collection Instructions: 1. Submit paraffin-embedded ductal carcinoma in situ or solid intracystic papillary carcinoma breast carcinoma tissue.  
2. Paraffin blocks will be returned with final report.

**Specimen Minimum Volume:** Entire specimen

**Transport Temperature:**
Special Ambient  
(preferred)
Refrigerated

**CPT Code Information:** 88360

**HERBA 70912**

**HER2, Breast, Quantitative Immunohistochemistry, Automated with HER2 FISH Reflex**

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554)  
Specimen Type: Preferred: A paraffin-embedded tissue block containing breast cancer tissue that has been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours and shipped at ambient temperature Acceptable: 5 unstained sections containing breast carcinoma on charged slides cut at 4 microns <1 month ago and shipped at ambient temperature. Tissue on the slides should have been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours.  
Container/Tube: Pathology Packaging Kit (T554)  
Collection Instructions: Submit paraffin-embedded invasive or metastatic breast carcinoma tissue. Additional Information: 1. When ordering this test, the following questions, as stated on the order form or presented electronically, must be answered: a. "Was specimen fixed in 10% neutral buffered formalin within 1 hour from surgical collection time? Yes, No, or Unknown." b. "Has specimen been fixed in 10% neutral buffered formalin for 6 to 72 hours? Yes, No, or Unknown." 2. According to the College of American Pathologists (CAP)/American Society of Clinical Oncology (ASCO) guidelines, HER2 protein immunohistochemical test results are only valid for nondecalcified, paraffin-embedded specimens fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total time of 6 to 72 hours. Under- or overfixation may affect these results. 3. HER2 immunohistochemistry testing on intracystic papillary carcinoma and solid papillary carcinoma, without clearly stating invasive carcinoma, is not appropriate and will be canceled without processing.  
4. Paraffin blocks will be returned with final report.

**Transport Temperature:**
HERBN 70913  HER2, Breast, Quantitative Immunohistochemistry, Automated, No Reflex

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554) Specimen Type: Preferred: A paraffin-embedded tissue block containing breast cancer tissue that has been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours and shipped at ambient temperature Acceptable: 2 unstained sections, containing breast carcinoma, on charged slides cut at 4 microns less than 1 month ago and shipped at ambient temperature. Tissue on the slides should have been fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total of 6 to 72 hours. Container/Tube: Pathology Packaging Kit (T554) Collection Instructions: Submit paraffin-embedded invasive or metastatic breast carcinoma tissue. Additional Information: 1. When ordering this test, the following questions, as stated on the order form or presented electronically, must be answered: a."Was specimen fixed in 10% NB formalin w/in 1 hour? Yes, No, or Unknown” b."Was specimen fixed in 10% NB formalin 6-72 hours? Yes, No, or Unknown" 2. According to the College of American Pathologists (CAP)/American Society of Clinical Oncology (ASCO) guidelines, HER2 protein immunohistochemical test results are only valid for nondecalcified, paraffin-embedded specimens fixed in 10% neutral buffered formalin within 1 hour from surgical collection time and for a total time of 6 to 72 hours. Under- or overfixation may affect these results. 3. HER2 immunohistochemistry testing on intracystic papillary carcinoma and solid papillary carcinoma, without clearly stating invasive carcinoma, is not appropriate and will be canceled without processing. 4. Paraffin blocks will be returned with final report.

**Specimen Minimum Volume:** Entire block

**Transport Temperature:**
Special Ambient
(preferred)
Refrigerated

CPT Code Information: 88361

HERGM 70911  HER2, Gastric/Esophageal, Semi-Quantitative Immunohistochemistry, Manual

**Specimen Requirements:** Only formalin-fixed, paraffin-embedded (FFPE) gastric or esophageal adenocarcinoma specimens will be accepted. Fixation in 10% neutral-buffered formalin is preferred. The performance and quality of immunohistochemical stains in 10% neutral-buffered FFPE tissue depends on proper fixation. It is recommended (not required) for surgical specimens to be fixed between 18 and 24 hours and biopsy specimens between 6 and 8 hours. If being ordered for prognostic purposes: Specimen Type: Gastric or esophageal adenocarcinoma Supplies: Pathology Packaging Kit (T554) Preferred: Paraffin-embedded tissue block containing invasive gastric or esophageal adenocarcinoma tissue Additional Information: Paraffin blocks will be returned with final report. Acceptable: Slides Specimen Volume: 5 Collection Instructions: 5 unstained sections, containing gastric or esophageal adenocarcinoma, on charged slides cut at 4 microns less than 1 month ago.

**Transport Temperature:**
**HERGN 70914**

**HER2, Gastric/Esophageal, Semi-Quantitative Immunohistochemistry, Manual, No Reflex**

**Specimen Requirements:** Only formalin-fixed, paraffin-embedded (FFPE) gastric or esophageal adenocarcinoma specimens will be accepted. Fixation in 10% neutral-buffered formalin is preferred. The performance and quality of immunohistochemical stains in 10% neutral-buffered FFPE tissue depends on proper fixation. It is recommended (not required) for surgical specimens to be fixed between 18 and 24 hours and biopsy specimens between 6 and 8 hours. If being ordered for prognostic purposes: Specimen Type: Gastric or esophageal adenocarcinoma Supplies: Pathology Packaging Kit (T554) Preferred: Paraffin-embedded tissue block containing invasive gastric or esophageal adenocarcinoma tissue Additional Information: Paraffin blocks will be returned with final report. Acceptable: Slides Specimen Volume: 5 Collection Instructions: 5 unstained sections, containing gastric or esophageal adenocarcinoma, on charged slides cut at 4 microns less than 1 month ago.

**Transport Temperature:**
Special Ambient (preferred)
Refrigerated

**CPT Code Information:** 88360

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**BRCRC 64330**

**Hereditary Breast and Colorectal Cancer Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this assay; see Special Instructions. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Refrigerated (preferred)
Ambient
Frozen

**CPT Code Information:** 81162-BRCA-1-BRCA2; 81321-PTEN; 81405-STK11; 81405-TP53; 81406-CDH1; 81292-MLH1; 81295-MSH2; 81298-MSH6; 81317-PMS2; 81319-PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants; 81403-EPCAM; 81228-Cytogenomic constitutional
(genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**Hereditary Breast Cancer 4 Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this assay; see Special Instructions. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

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**CPT Code Information:** 81406-CDH1; 81321-PTEN; 81405-STK11; 81405-TP53; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**Hereditary Breast Cancer 6 Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this assay; see Special Instructions. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

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**CPT Code Information:** 81162-BRCA1-BRCA2; 81406-CDH1; 81321-PTEN; 81405-STK11; 81405-TP53; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);
**COLAB 35382**

**Hereditary Colon Cancer CGH Array**


**Transport Temperature:**

Varies

**CPT Code Information:** 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome or oligo-based comparative genomic hybridization microarray analysis)

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**HCRC 35450**

**Hereditary Colon Cancer Multi-Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Call Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies Ambient

(preferred)

Frozen

Refrigerated

**CPT Code Information:** 81435

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**HEMP 61337**

**Hereditary Erythrocytosis Mutations**

**Specimen Requirements:** Container/Tube: EDTA (lavender) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Whole blood Refrigerated 30 days

**CPT Code Information:** 81479-Unlisted molecular pathology procedure
NGHHA

Hereditary Hemolytic Anemia Comprehensive Sequencing, Varies

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood (preferred) Container/Tube: Preferred: Lavender top (EDTA) or Yellow top (ACD) Acceptable: Green top (heparin) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Refrigerated < or =30 days Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: 1. Indicate volume and concentration of the DNA. 2. Label specimen as extracted DNA and source of specimen. Specimen Stability: Frozen/Refrigerated/Ambient < or =30 days

**Specimen Minimum Volume:** Blood: 1 mL Extracted DNA: 100 mcL at 20 ng/mcL concentration

**Transport Temperature:**

Varies

**CPT Code Information:** 81242-FANCC; 81350-UGT1A; 81364-HBB; 81249-G6PD; 81405 x 3-PKLR, RPS19, SLC2A1; 81479-AK1, ALDOA, ANK1, C15ORF41, CD59, CDAN1, EPB41, PB42, FANCA, FANCG, GATA1, GCLC, GPI, GSS, CYPC, HBD, HK1, HMOX1, KIF23, KLF1, NT5C3A, PFKM, PIEZO1, RHAO, SEC23B, SLC4A1, SPTA1, SPTB, STOM, TPI1;

HHTGP

Hereditary Hemorrhagic Telangiectasia Gene Panel

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (Preferred)/Refrigerated Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**

Varies

**CPT Code Information:** 81479; 81406 x 2;

HMSNP

Hereditary Motor and Sensory Neuropathy Panel by Next-Generation Sequencing (NGS)

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL
**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81448

**Hereditary Motor Neuropathy Panel by Next-Generation Sequencing (NGS)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81448

**Hereditary Pancreatitis Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81222-CFTR (cystic fibrosis transmembrane conductance regulator) (eg, cystic fibrosis) gene analysis; duplication/deletion variants; 81223-CFTR (cystic fibrosis transmembrane conductance regulator) (eg, cystic fibrosis) gene analysis; full gene sequence; 81404-PRSS1 (protease, serine, 1 [trypsin 1]) (eg, hereditary pancreatitis), full gene sequence; 81404-SPINK1 (serine peptidase...
inhibitor, Kazal type 1) (eg, hereditary pancreatitis), full gene sequence; 81405-CTRC gene;

**Hereditary Pheochromocytoma/Paraganglioma Multi Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81437

**Hereditary Sensory/Autonomic Neuropathy Panel by Next-Generation Sequencing (NGS)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81448

**Hereditary Spastic Paraplegia Neuropathy Panel by Next-Generation Sequencing (NGS)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.
Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81448

### LHSVZ 800315

**Herpes Simplex Virus (HSV) and Varicella-Zoster Virus (VZV), Molecular Detection, PCR**

**Specimen Requirements:** Submit only 1 of the following specimens:

**Supplies:** Culturette (BBL Culture Swab) (T092) M4-RT (T605)

**Specimen Type:** Swab

**Sources:** Genital, dermal, eye, or throat

**Container/Tube:** Multimicrobe media (M4-RT) (T605)

**Specimen Volume:** Swab

**Collection Instructions:** Place swab back into multimicrobe media (M4-RT [T605], M4, or M5).

**Additional Information:** Source information should include the main anatomical source of collection.

**Supplies:** Aliquot Tube, 5 mL (T465)

**Specimen Type:** Fluid

**Sources:** Pleural, peritoneal, ascites, pericardial, amniotic, or ocular

**Container/Tube:** Sterile container

**Specimen Volume:** 0.5 mL

**Collection Instructions:** Do not centrifuge.

**Specimen Type:** Respiratory

**Sources:** Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate

**Container/Tube:** Sterile container

**Specimen Volume:** 1.5 mL

**Collection Instructions:** Submit only fresh tissue in multimicrobe media (M4-RT) (T605) or a sterile container with 1 to 2 mL sterile saline.

**Specimen Minimum Volume:**
- Body Fluid or Ocular Fluid: 0.3 mL
- Respiratory: 1 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87529 x2 HSV-1 and HSV-2; 87798-VZV

### MHSV 87998

**Herpes Simplex Virus (HSV) Antibody Screen, IgM, by EIA, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86694-HSV EIA; 86694-HSV IFA (if appropriate)
Herpes Simplex Virus (HSV) Type 1- and Type 2-Specific Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86695-Herpes simplex, type 1; 86696-Herpes simplex, type 2;

Herpes Simplex Virus (HSV) Type 1- and Type 2-Specific Antibodies, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86694-HSV IgM EIA; 86695-Herpes simplex, type 1; 86696-Herpes simplex, type 2; 86694-HSV IFA (if appropriate);

Herpes Simplex Virus (HSV), Culture From Neonates

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Swab Supplies: M4-RT (T605) Sources: Ocular, Rectal, Skin, Dermal, Mouth, Nasopharynx, Conjunctiva, Eye, Anus Container/Tube: Multimicrobe media (M4-RT) (T605) or other viral transport media (M4 or M5) Specimen Volume: Swab Collection Instructions: Place swab back into multimicrobe media (M4-RT, M4, or M5) Additional Information: Swab with a wood handle has been shown to be toxic to some viruses and is not acceptable for culture. Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Stool Container/Tube: Sterile container Specimen Volume: 5 to 10 g

**Specimen Minimum Volume:** Stool: 5 g Urine: 0.5 mL

**Transport Temperature:**
- Varies Refrigerated 7 days

**CPT Code Information:** 87254 x 2

Herpes Simplex Virus (HSV), Molecular Detection, PCR

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Fluid
Sources: Pleural, peritoneal, ascites, pericardial, amniotic, or ocular
Container/Tube: Sterile container
Specimen Volume: 0.5 mL
Collection Instructions: Do not centrifuge.
Supplies: BBL CultureSwab (T092) M4-RT (T605)
Specimen Type: Swab
Sources: Genital, dermal, ocular, nasal, throat, or oral
Container/Tube: Multimicrobe media (M4-RT) (T605)
Specimen Volume: Entire collection
Collection Instructions: Place swab back into multimicrobe media (M4-RT [T605], M4, or M5)
Additional Information: Source information should include main anatomical site of collection.
Specimen Type: Respiratory
Sources: Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate
Container/Tube: Sterile container
Specimen Volume: 1.5 mL
Supplies: M4-RT (T605)
Specimen Type: Tissue
Sources: Brain, colon, kidney, liver, lung, etc.
Container/Tube: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT [T605], M4, or M5)
Specimen Volume: Entire collection
Collection Instructions: Submit only fresh tissue.
Additional Information: Source information should include main anatomical site of collection.
Specimen Type: Urine (<1 month old infant)
Container/Tube: Sterile container
Specimen Volume: 0.5 mL
Specimen Minimum Volume: Body or Ocular Fluid: 0.3 mL; Respiratory Specimen: 1 mL
Transport Temperature:
Varies Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87529 x 2

LHSV B
802067
Herpes Simplex Virus (HSV), Molecular Detection, PCR, Blood
Specimen Requirements: Container/Tube: Lavender top (EDTA)
Specimen Volume: 1 mL
Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Whole Blood EDTA Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87529 x 2

H SVC
63434
Herpes Simplex Virus (HSV), Molecular Detection, PCR, Spinal Fluid
Specimen Requirements: Supplies: Aliquot Tube, 5 mL (T465)
Container/Tube: Aliquot tube (12-x 75-mm screw cap vial: T465)
Specimen Volume: 0.2 mL
Collection Instructions: Do not centrifuge or heat-inactivate.
Additional Information: 1. The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by herpes simplex virus DNA is not likely. 2. Specimens that are received with less than the minimum volume required for all testing requested will be canceled.
Specimen Minimum Volume: 0.1 mL
Transport Temperature:
CSF Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87529 x 2
**HERPB** 601898

**Herpes Simplex Virus 1 and 2, Qualitative PCR, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL  
**Specimen Minimum Volume:** 0.3 mL  
**Transport Temperature:** Whole Blood EDTA Refrigerated 7 days  

**CPT Code Information:** 87529 x 2

**HERPV** 82001

**Herpes Simplex Virus 1 and 2, Qualitative PCR, Varies**

**Specimen Requirements:** It is recommended that HERPV be collected separately from other PCR tests. Submit only 1 of the following specimens:  
- Specimen Type: Fluid Sources: Pleural, peritoneal, ascites, pericardial, amniotic, or ocular  
  Container/Tube: Sterile container Specimen Volume: 0.5 mL  
  Collection Instructions: Do not centrifuge.  
- Specimen Type: Respiratory Sources: Bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate  
  Container/Tube: Sterile container Specimen Volume: 1 mL  
- Specimen Type: Swab Sources: Genital, cervical, rectal, dermal, ocular, nasal, throat, or oral  
  Supplies: Culturette (BBL Culture Swab) (T092) M4 media, M4-RT (T605)  
  Specimen Volume: Entire collection  
  Collection Instructions: Place swab into multimicrobe media (M4-RT [T605], M4, or M5 media).  
- Specimen Type: Tissue Sources: Brain, colon, kidney, liver, lung, etc.  
  Supplies: M4-RT (T605) or M4 media  
  Container/Tube: Sterile container Specimen Volume: 1 mL  
  Collection Instructions: Submit only fresh tissue.  
- Specimen Type: Urine (<1 month old infant)  
  Container/Tube: Sterile container Specimen Volume: 0.5 mL  

**Specimen Minimum Volume:** Fluids, Respiratory, and Urine: 0.3 mL Swabs and Tissue: Entire collection  
**Transport Temperature:** Varies Refrigerated 7 days  

**CPT Code Information:** 87529 x 2

**HRPSV** 70467

**Herpes Simplex Virus, I and II (HSV I and II) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)  
- Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block  

**Transport Temperature:**  
TECHONLY Ambient (preferred)  
Refrigerated  

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Herpes Virus 6 DNA, Qualitative Real-Time PCR

**Specimen Requirements:** Draw blood in lavender-top (EDTA) tube(s) or yellow-top (ACD) tube(s) and send 1 mL of whole blood refrigerated. (DO NOT FREEZE)

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood: Refrigerated (preferred) 7 days
- Ambient: 48 hours

**CPT Code Information:** 87532

Herpes Virus-6 DNA, Quantitative Real-Time PCR

**Specimen Requirements:** Submit only one of the following:
- Whole Blood: Collect 1 mL (lavender-top) EDTA or (yellow-top) ACD whole blood. Ship refrigerate. Serum: Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Separate immediately and submit 1 mL serum refrigerate in a plastic vial. Plasma: Draw blood in a (lavender-top) EDTA or (yellow-top) ACD tube(s). (Plasma gel tube is acceptable.) Separate immediately and submit 1 mL plasma refrigerate in a plastic vial. CSF: Collect 1 mL of spinal fluid (CSF) is sterile leak proof container. Ship refrigerate in a plastic vial. Bronchoalveolar Lavage: Collect 1 mL bone marrow in a (lavender-top) EDTA or (yellow-top) ACD tube. Ship refrigerate.
- Bone Marrow: Collect 1 mL bone marrow in a (lavender-top) EDTA or (yellow-top) ACD tube. Ship refrigerate.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:** Varies Refrigerated 7 days

**CPT Code Information:** 87533

Herpesvirus 7 (HHV-7) DNA, Quantitative Real-Time PCR

**Specimen Requirements:** Submit only 1 of the following specimens:
- Whole Blood: Draw blood in a lavender-top (EDTA) tube(s) or yellow-top (ACD) tube(s) and submit 1 mL whole blood. Ship refrigerated (DO NOT FREEZE). Serum: Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Allow blood to clot at room temperature and separate serum from cells within 2 hours of collection. Submit 1 mL serum in a plastic vial. Ship refrigerated. Plasma: Draw blood in an EDTA or ACD tube(s). (Plasma gel tube is acceptable.) Allow blood to clot at room temperature and separate plasma from cells within 2 hours of collection. Submit 1 mL plasma in a plastic vial. Ship refrigerated.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen: 30 days
  - Ambient: 48 hours

**CPT Code Information:** 87799

Herpesvirus 7 IgG and IgM Antibody Panel, IFA
Specimen Requirements: Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL serum in a screw-capped vial, shipped refrigerate.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days

Frozen 30 days
Ambient 7 days

CPT Code Information: 86790 x 2

Herpesvirus 8 (HHV-8) DNA, Quantitative Real-Time PCR

Specimen Requirements: Submit only 1 of the following specimens: Whole Blood Draw blood in a lavender (EDTA) or yellow (ACD) tube(s) and submit 0.7 mL whole blood refrigerated (DO NOT FREEZE) Serum Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.7 mL serum refrigerated in a plastic vial. Plasma Draw blood in an EDTA or ACD tube(s), plasma gel tube(s) is acceptable. Spin down and send 0.7 mL plasma refrigerated in a plastic vial.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Varies Refrigerated (preferred) 7 days

Ambient 48 hours

CPT Code Information: 87799

Herring, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003

Hexagonal Phospholipid Neutralization

Specimen Requirements: Draw blood in a light blue-top (Sodium citrate) tube(s). Spin down and send 1 mL citrated plasma frozen in a plastic vial. Note: Separate specimens must be submitted when multiple tests are ordered.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Plasma Na Cit  Frozen

CPT Code Information: 85598

**HEXAI**

**Hexahydrophtalic Anhydride, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
                      Frozen               90 days

CPT Code Information: 86003

**MUGS**

**Hexosaminidase A (MUGS), Serum**

**Specimen Requirements:** Patient Preparation: Patient should be fasting for 4 hours. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
Serum Frozen (preferred)  365 days
                      Refrigerated               5 days

CPT Code Information: 83080

**NAGW**

**Hexosaminidase A and Total Hexosaminidase, Leukocytes**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood ACD Refrigerated (preferred)  4 days
                      Ambient               4 days

CPT Code Information: 83080 x 2

**NAGS**

**Hexosaminidase A and Total Hexosaminidase, Serum**
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 30 days
Refrigerated 7 days

CPT Code Information: 83080 x 2

NAGR 82943

Hexosaminidase A and Total, Leukocytes/Molecular Reflex

Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Whole Blood ACD Refrigerated (preferred) 4 days
Ambient 4 days

CPT Code Information: Hexosaminidase A and Total, Leukocytes/Molecular Reflex 83080 x 2 Tay-Sachs Disease, Mutation Analysis, HEXA (if appropriate); 81255;

FSHAG 57950

Hickory Shagbark (Carya ovata) IgE

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

HMGA 70460

High Mobility Group A2 (HMGA2) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
**Refrigerated**

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**HIPA 9756**

**Hippuric Acid, Urine**

**Specimen Requirements:** Send 3 mL from a random urine collection. Send specimen refrigerated in a plastic urine container.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Frozen 30 days
- Ambient 5 days

**CPT Code Information:** 82570 ; 83921;

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**FHSPL 57533**

**Histamine Plasma**

**Specimen Requirements:** Draw 3 mL blood in a lavender-top (EDTA) tube(s). Cool immediately on ice. Centrifuge at 1500 rpm for 10 minutes at 4°C. The centrifugation should be performed within 20 minutes of collection. Carefully remove 1 mL of EDTA plasma from the upper part of the tube. Freeze and send frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Plasma EDTA Frozen 365 days

**CPT Code Information:** 83088

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**FH24U 57821**

**Histamine, 24-Hour Urine**

**Specimen Requirements:** Patient Preparation: Avoid taking allergy causing drugs, antihistamines, oral corticosteroids, and substances which block H2 receptors for at least 24 hours prior to specimen collection. Avoid direct sunlight during the collection. Specimen Type: Urine Submission Container/Tube: Plastic, 10-mL tube (T068) Specimen Volume: 4 mL Collection Instructions: Submit only 1 of the following: -Collect 24-hour urine with 10 mL 6N HCL. (Preferred) -Collect 24-hour urine without preservative. 1. Collect urine for 24 hours, either with 10 mL 6N HCL preservative (preferred), or with no preservative. 2. Avoid direct sunlight during the 24-hour collection. 3. Send specimen refrigerated in the plastic, 10-mL urine tube (T068) 4. Collection volume and duration are required

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 48 hours
Histamine, Whole Blood

**Specimen Requirements:** Collect blood in a green top tube (sodium or lithium heparin). Submit 1 mL well-mixed blood in a plastic screw cap tube frozen. NOTE: 1. Critical frozen. Separate samples must be submitted when multiple tests are ordered. 2. Unacceptable: non-frozen samples

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- WB Heparin Frozen (preferred) 180 days
- Refrigerated 6 hours
- Ambient 2 hours

Histone Autoantibodies, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

Histone H3 K27M mutant (H3 K27M), Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

Histone H3 Trimethyl K27 (H3 K27me[3]) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Type: Tissue Container/Tube: Immunostain Technical Only Envelope Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** NA

**Transport Temperature:**

TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**SHSTO**

Histoplasma Antibody, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86698 x 3

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**CHIST**

Histoplasma Antibody, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

CSF Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86698 x 3

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**UHIST**

Histoplasma Antigen, Urine

**Specimen Requirements:** Supplies: Aliquot tube, 5-mL (T465) Container/Tube: Plastic, 5-mL aliquot tube (T465) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. 3. Excessively bloody or very turbid specimens containing protein, cells, or particulates will be cancelled as they can inhibit the function of the test. 4. Centrifuging to remove particulates is not approved. 5. Specimens with any dyes or unnatural color are not acceptable and will be cancelled.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days
Frozen 14 days
**Histoplasma capsulatum/Blastomyces species, Molecular Detection, PCR, Varies**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Histoplasma or Blastomyces species DNA is not likely. Submit only 1 of the following specimens: Specimen Type: Body fluid Sources: Body, CSF, bone marrow Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Respiratory Sources: BAL, bronchial washing, sputum Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Tissue or bone Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Collect a fresh tissue or bone specimen. Acceptable: Specimen Type: NALC/NaOH-digested respiratory specimens Sources: Lavage fluid, bronchial washing, gastric washing, respiratory fluid, sputum, or tracheal secretion Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: 1. Submit digested specimen treated with NALC/NaOH. 2. Clearly indicate on container and order form that specimen is a digested specimen.

**Specimen Minimum Volume:** Body Fluid or Respiratory Specimen: 0.5 mL

**Transport Temperature:**
- Varieties Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 87385-X 2 (if appropriate)

**Histoplasma/Blastomyces Panel, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 87798 x 2

**HIV Antigen and Antibody Prenatal Routine Screen, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 4 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Transfer plasma into aliquot tube.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma Refrigerated (preferred) 6 days

**CPT Code Information:** 86698 x 3-Histoplasma Antibody, CSF; 86612-Blastomyces Antibody, CSF;
**CPT Code Information:** 87389; G0475;

**HV1CD 83628**

**HIV-1 and HIV-2 Antibodies for Cadaveric or Hemolyzed Specimens, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Spin down and remove serum from clot within 24 hours.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** 86703; 86701; 86702;

**HVDSP 601759**

**HIV-1 and HIV-2 Antibody Confirmation and Differentiation Prenatal, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off plasma into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 30 days
- Refrigerated 6 days

**CPT Code Information:** 86701-HIV-1 Antibody; 86702-HIV-2 Antibody;

**HVDIP 601758**

**HIV-1 and HIV-2 Antibody Confirmation and Differentiation, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Pour off plasma into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 30 days
- Refrigerated 6 days
<table>
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<tr>
<th>Code</th>
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<tr>
<td>HIVDI 62421</td>
<td>HIV-1 and HIV-2 Antibody Confirmation and Differentiation, Serum</td>
<td>Only orderable as a reflex. For more information see: HV1CD / HIV-1 and HIV-2 Antibodies for Cadaveric or Hemolyzed Specimens, Serum HV1CM / HIV-1 and HIV-2 Antibody Screen for Hemolyzed Specimens, Serum. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Centrifuge and remove serum from clot within 24 hours. Specimen Minimum Volume: 0.1 mL</td>
</tr>
<tr>
<td>HV1CM 60357</td>
<td>HIV-1 and HIV-2 Antibody Screen for Hemolyzed Specimens, Serum</td>
<td>Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Spin down and remove serum from clot within 24 hours. Specimen Minimum Volume: 0.2 mL</td>
</tr>
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CPT Code Information: 86701-HIV-1 Antibody; 86702-HIV-2 Antibody; 62421 HIV-1 and HIV-2 Antibody Confirmation and Differentiation, Serum

Specimen Requirements: Only orderable as a reflex. For more information see: HV1CD / HIV-1 and HIV-2 Antibodies for Cadaveric or Hemolyzed Specimens, Serum HV1CM / HIV-1 and HIV-2 Antibody Screen for Hemolyzed Specimens, Serum. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Centrifuge and remove serum from clot within 24 hours. Specimen Minimum Volume: 0.1 mL

Transport Temperature:
- Serum Frozen (preferred): 30 days
- Refrigerated: 14 days
- Ambient: 48 hours

CPT Code Information: 86701-HIV-1 Antibody; 86702-HIV-2 Antibody; 60357 HIV-1 and HIV-2 Antibody Screen for Hemolyzed Specimens, Serum

Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Spin down and remove serum from clot within 24 hours. Specimen Minimum Volume: 0.2 mL

Transport Temperature:
- Serum Frozen (preferred): 30 days
- Ambient: 7 days
- Refrigerated: 7 days

CPT Code Information: 86703; G0432; 86701 (if appropriate); 86702 (if appropriate);

HIVDX 48392 HIV-1 and HIV-2 Antigen and Antibody Diagnostic Evaluation, Plasma

Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 4 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer's instructions. 2. Transfer plasma into aliquot tube. Specimen Minimum Volume: 1.2 mL

Transport Temperature:
- Plasma Refrigerated (preferred): 6 days
- Frozen: 30 days

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**CPT Code Information:** 87389

**HVCOP 48341**

**HIV-1 and HIV-2 Antigen and Antibody Routine Screen, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 4 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer’s instructions. 2. Transfer plasma into aliquot tube.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma Refrigerated (preferred) 6 days
- Frozen 30 days

**CPT Code Information:** 87389; G0475;

**HIVP 64693**

**HIV-1 DNA and RNA Qualitative Detection by PCR, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down and remove plasma from cells within 6 hours of draw. Additional Information: This test can be used for detection and diagnosis of HIV-1 infections, including in children younger than 18 months of age when serologic tests are not useful (due to presence of maternal HIV antibodies).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 5 days

**CPT Code Information:** 87535

**HIVI 63247**

**HIV-1 Genotypic Integrase Inhibitor Drug Resistance, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Polypropylene vial Specimen Volume: 2.2 mL Collection Instructions: Centrifuge and aliquot plasma per collection tube manufacturer’s instructions for use (eg, centrifuge and aliquot within 2 hours of collection for BD Vacutainer tubes). Additional Information: To ensure a minimum HIV-1 RNA amount (at least 500 copies/mL), the preferred blood volume must be submitted. Testing may be canceled is the specimen supplied is inadequate.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 5 days

**CPT Code Information:** 87906

**HIVPR 37216**

**HIV-1 Genotypic Protease and Reverse Transcriptase Inhibitor**
**Drug Resistance, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2.2 mL Collection Instructions: 1. Spin down and remove plasma from cells within 6 hours of draw. 2. Freeze plasma specimen immediately, and ship specimen frozen on dry ice. 3. If shipment will be delayed for >24 hours, freeze plasma specimen at -70°C (up to 35 days) until shipment on dry ice. Additional Information: 1. This test is intended to be used to monitor known HIV-positive infections. It is not intended for primary detection of HIV infections. 2. Specimens submitted for HIV-1 genotyping should contain > or =500 copies/mL of HIV-1 RNA.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 24 hours

**CPT Code Information:** 87901

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**HIV-1 RNA Detection and Quantification, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender-top (EDTA plasma) Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube and pour off plasma into aliquot tube per collection tube manufacturer’s instructions. 2. Pour off plasma into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 84 days
- Refrigerated 6 days

**CPT Code Information:** 87536

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**HIV-1 RNA Detection and Quantification, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2.5 mL Collection Instructions: 1. Spin down and remove plasma from cells within 6 hours of draw. 2. Freeze plasma specimen immediately. Additional Information: This test can be used for detection and diagnosis of HIV-1 infections, including in children less than 18 months of age when serologic tests are not useful (due to presence of maternal HIV antibodies).

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 5 days

**CPT Code Information:** 87536

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**HIV-1 RNA Detection and Quantification, Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2.2 mL Collection Instructions: 1. Spin down and remove plasma from cells within 6 hours of draw. 2. Freeze plasma specimen immediately, and ship specimen frozen on dry ice. 3. If shipment will be delayed for >24 hours, freeze plasma specimen at -70°C (up to 35 days) until shipment on dry ice. Additional Information: 1. This test is intended to be used to monitor known HIV-positive infections. It is not intended for primary detection of HIV infections. 2. Specimens submitted for HIV-1 genotyping should contain > or =500 copies/mL of HIV-1 RNA.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 24 hours

**CPT Code Information:** 87901
HIV-1 RNA Detection and Quantification, Prenatal, Plasma

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender-top (EDTA) Submission Container/Tube: Polypropylene vial (T465) Specimen Volume: 1.5 mL Collection Instructions: 1. Centrifuge blood collection tube per collection tube manufacturer’s instructions. 2. Pour off plasma into aliquot tube.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 84 days
- Refrigerated 6 days

**CPT Code Information:** 87536

HIRGT 65713

HIV-1 RNA Quantification with Reflex to HIV-1 Genotypic Drug Resistance to Protease and Reverse Transcriptase Inhibitors, Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 3.6 mL Collection Instructions: 1. Centrifuge blood collection tube and pour off plasma into aliquot tube per collection tube manufacturer’s instructions, eg, separate and aliquot plasma within 2 hours of blood collection for BD Vacutainer K2EDTA tube. 2. Freeze aliquoted plasma immediately for transport.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 5 days

**CPT Code Information:** 87536-HIV-1 Quantification; 87901-HIV-1 genotypic drug resistance (if appropriate);

HIVQG 601739

HIV-1 RNA Quantification with Reflex to HIV-1 Genotypic Drug Resistance, Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Spin down and remove plasma from cells within 6 hours of draw. 2. Freeze plasma specimen immediately.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 35 days
- Refrigerated 5 days

**CPT Code Information:** 87536-HIV-1, quantification; 87901-HIV-1 genotypic drug resistance (if appropriate);
HIV-2 Antibody Confirmation, Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Frozen (preferred) 30 days
- Refrigerated 14 days
- Ambient 48 hours

**CPT Code Information:** 86689

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**FHV2Q 91490**

HIV-2 DNA/RNA Qualitative Real-Time PCR

**Specimen Requirements:** Collect 1 mL (lavender-top) EDTA or (yellow-top) ACD whole blood. Ship refrigerate.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 6 days
- Ambient 6 days

**CPT Code Information:** 87538

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**FHLAA 91498**

HLA A High Resolution

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube. Send 14 mL of EDTA whole blood at ambient temperature.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient 14 days

**CPT Code Information:** 81380

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**FHLAB 91499**

HLA B High Resolution

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube. Send 14 mL of EDTA whole blood at ambient temperature.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient 14 days

**CPT Code Information:** 81380
**FHLAC**

**HLA C High Resolution**

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s). Send 14 mL EDTA whole blood ambient.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Whole Blood EDTA  Ambient 14 days

**CPT Code Information:** 81380

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**DISI**

**HLA Class I Molecular Typing Disease Association**

**Specimen Requirements:** Container/Tube: Yellow top (ACD solution B) Specimen Volume: 6 mL
Collection Instructions: Do not transfer blood to other containers. Additional Information: Specimen acceptability is based on extracted DNA concentration and not sample age.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole Blood ACD-B  Refrigerated  
(preferred)

Ambient

**CPT Code Information:** 81372-HLA class I typing, low resolution (eg, antigen equivalents); complete (ie, HLA-A, -B and -C)

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**DIS2**

**HLA Class II Molecular Typing Disease Association**

**Specimen Requirements:** Container/Tube: Yellow top (ACD solution B) Specimen Volume: 6 mL
Collection Instructions: Do not transfer blood to other containers. Additional Information: Specimen acceptability is based on extracted DNA concentration and not sample age.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole Blood ACD-B  Refrigerated  
(preferred)

Ambient

**CPT Code Information:** 81375-HLA Class II typing, low resolution (eg, antigen equivalents); HLA-DRB1/3/4/5 and -DQB1

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**HLAST**

**HLA Storage**

**Transport Temperature:**
Serum Red  Ambient (preferred)  24 hours

Refrigerated  24 hours
HLA-B 5701 Genotype, Abacavir Hypersensitivity, Blood

Specimen Requirements: Multiple whole blood EDTA genotype tests can be performed on a single specimen. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Whole Blood EDTA Ambient (preferred)
Refrigerated

CPT Code Information: 81381

HLA-B 5701 Genotype, Abacavir Hypersensitivity, Saliva

Specimen Requirements: Multiple saliva genotype tests can be performed on a single specimen. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Specimen Type: Saliva Supplies: DNA Saliva Collection Kit (T651: fees apply) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

Specimen Minimum Volume: See Specimen Required.

Transport Temperature: Saliva Ambient

CPT Code Information: 81381

HLA-B*5801 Genotype, Allopurinol Hypersensitivity, Blood

Specimen Requirements: Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

Specimen Minimum Volume: 0.35 mL

Transport Temperature:
Whole Blood EDTA Ambient (preferred)
Refrigerated

CPT Code Information: 81381

HLA-B*5801 Genotype, Allopurinol Hypersensitivity, Saliva

Specimen Requirements: Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply)
Specimen Volume: Full tube
Collection Instructions: 1. Fill to tube line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Saliva Ambient

**CPT Code Information:** 81381

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**LY27B**

**HLA-B27, Blood**

**Specimen Requirements:** Specimen must arrive within 96 hours of draw. Container/Tube: Lavender top (EDTA) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 4 days

**CPT Code Information:** 86812

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**HMB45**

**HMB45 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**HMBSZ**

**HMBS Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper)
Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 
Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age 
is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 
hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep 
specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 
1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in 
Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese 
Instructions (T800) in Special Instructions. 
Specimen Minimum Volume: Blood: 1 mL Blood Spots: 3
Transport Temperature: Varies Varies

CPT Code Information: 81406-Unlisted molecular pathology procedure; ; Fibroblast Culture for 
Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation 
(if appropriate);

**HCMM 89047**

**Homocysteine (Total), Methylmalonic Acid, and Methylcitric Acid, Blood Spots**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) 
Container/Tube: Preferred: Card-Blood Spot Collection (Filter Paper) from heel or finger stick 
Acceptable: Local newborn screening card, Whatman Protein Saver 903 paper Specimen Volume: 2 
blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA or ACD to 
collect specimen. Sodium heparin is acceptable, but must be spotted on card the same day as collected. 
2. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per 
circle). 3. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 
4. Do not expose specimen to heat or direct sunlight. 5. Do not stack wet specimens. 6. Keep specimen 
dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection 
Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see 
Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
Specimen Minimum Volume: Blood Spots: 1
Transport Temperature:
Whole blood Ambient 
(preferred) 
Frozen 
Refrigerated

CPT Code Information: 83090-Homocysteine; 83918-Methylmalonic acid and methylcitric acid;

**HCYSP 80379**

**Homocysteine, Total, Plasma**

**Specimen Requirements:** Patient Preparation: Fasting (12 hours preferred but not required) 
Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Plasma Preparation Tube (PPT), citrate, 
sodium fluoride, heparin Specimen Volume: 0.4 mL Collection Instructions: 1. Immediately place 
specimen on wet ice. 2. Spin down and separate plasma from cells within 4 hours of draw. A 
refrigerated centrifuge is not required if 4-hour time restraint is met. 3. Alternatively, if blood is not 
immmediately placed on ice, plasma must be removed from cells within 1 hour of draw. A refrigerated 
centrifuge is not required if 1-hour time restraint is met.
Specimen Minimum Volume: 0.15 mL
Transport Temperature:
Plasma EDTA Refrigerated (preferred)
Frozen

CPT Code Information: 83090

**HCYSS**

**Homocysteine, Total, Serum**

**Specimen Requirements:**
- Patient Preparation: Fasting (12 hours, preferred but not required)
- Container/Tube: Red top or serum gel tube
- Specimen Volume: 0.4 mL
- Collection Instructions: 1. Immediately place specimen on wet ice. 2. Spin down and separate serum from cells within 4 hours of draw. A refrigerated centrifuge is not required if 1-hour time restraint is met. 3. Alternatively, if blood is not immediately placed on ice, serum must be removed from cells within 1 hour of draw. A refrigerated centrifuge is not required if 1-hour time restraint is met.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen

CPT Code Information: 83090

**HCYSU**

**Homocysteine, Total, Urine**

**Specimen Requirements:**
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 4 mL
- Collection Instructions: 1. Void and discard the first-morning urine specimen following an overnight fast. 2. Continue fasting, and collect the next random urine specimen.

**Specimen Minimum Volume:** 2.25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen

CPT Code Information: 83090

**HVA**

**Homovanillic Acid (HVA), 24 Hour, Urine**

**Specimen Requirements:**
- Patient Preparation: Administration of L-dopa may falsely increase homovanillic acid results; it should be discontinued 24 hours prior to and during collection of specimen.
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 5 mL
- Collection Instructions: 1. Collect a 24-hour urine specimen. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. If specimen is refrigerated during collection, preservative may be added up to 12 hours after collection. Use 15 mL of 50% acetic acid for children less than 5 years old. This preservative is intended to achieve a pH of between approximately 1 and 5. If necessary, adjust urine pH to 1 to 5 with 50% acetic or HCl acid.
- Additional Information: 1. The sensitivity of this test is greater on a 24-hour specimen than on a random specimen. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. 3. Bactrim may interfere with detection of the analyte.

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patients taking Bactrim should be identified to the laboratory when this test is ordered.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred)  28 days
- Frozen  180 days

**CPT Code Information:** 83150

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**Homovanillic Acid (HVA), Random, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube

Specimen Volume: 5 mL

Collection Instructions: 1. Collect a random urine specimen. 2. Adjust the urine pH to a level between 1 and 5 by adding 50% acetic acid dropwise and checking the pH.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred)  28 days
- Frozen  180 days

**CPT Code Information:** 83150

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**Honey, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested

Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
- Frozen  90 days

**CPT Code Information:** 86003

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**Honeybee Venom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested

Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
- Frozen  90 days
CPT Code Information: 86003

HOP
82370
Hop Fruit, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

HBEA
82484
Hornbeam, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

HORS
82874
Horse Dander, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

HSPR
82134
Horse Serum Proteins, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serialization Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Horsefly/Stablefly, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serialization Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Horseradish (Armoracia rusticana/A.lapathifolia) IgE

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serialization Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

House Dust Mites/Dermatophagoides fariniae, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**House Dust Mites/Dermatophagoides pteronyssinus, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**House Dust Panel**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: 0.05 mL x number of allergens + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**House Dust/Greer Lab, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003
House Dust/H-S Lab, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

HOXB13 Mutation Analysis (G84E)

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Stability Information:** Ambient (preferred)/Refrigerated/Frozen

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-HOXB13 gene, Unlisted molecular pathology procedure

HTLV I/II DNA, Qualitative Real-Time PCR

**Specimen Requirements:** Collection Container/Tube: Preferred: Lavender-top (EDTA) Acceptable: Yellow top (ACD, solution A) Specimen Volume: 1 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s), or yellow-top (ACD solution A) tube(s). Send 1 mL EDTA or ACD whole blood ambient.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days
- Refrigerated 14 days

**CPT Code Information:** 87798 x 2

Human Anti-mouse Antibody (HAMA)

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube is not
acceptable. Spin down and send 2 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Red Frozen 90 days

**CPT Code Information:** 83520

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**HCG**  
**70455**  
**Human Chorionic Gonadotropin (hCG) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**  
TECHONLY Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**THCG**  
**80678**  
**Human Chorionic Gonadotropin (hCG), Quantitative, Pregnancy, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Volume:** 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 72 hours

Frozen 365 days

**CPT Code Information:** 84702

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**HE4**  
**62137**  
**Human Epididymis Protein 4, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container: Plastic vial

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.50 mL

**Transport Temperature:**  
Serum Frozen (preferred) 84 days
Human Herpes Virus, Type 8 (HHV-8) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 86305

Human Herpesvirus 6 (HHV-6A and HHV-6B) by Quantitative PCR

**Specimen Requirements:** Submit only one of the following: CSF: Collect 1 mL spinal fluid (CSF) in sterile plastic container and ship frozen. Serum: Draw blood in serum gel tube(s). Spin down and send 1 mL of serum frozen in a plastic vial. Plasma: Draw blood in lavender (EDTA), pink (K2EDTA) tube(s), or (yellow ACD) tube(s). Spin down and send 1 mL of plasma frozen in a plastic vial. Note: 1. Source required. 2. Separate orders required for each specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Frozen (preferred) 90 days
- Refrigerated 5 days

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Human Herpesvirus-6, Molecular Detection, PCR, Plasma

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Preferred: Aliquot Tube, 5 mL (T465) Acceptable: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Spin down promptly.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87533
**HHV6V**

**Human Herpesvirus-6, Molecular Detection, PCR, Spinal Fluid**

**Specimen Requirements:**
- **Supplies:** Aliquot Tube, 5 mL (T465)
- **Container/Tube:** Preferred: Aliquot Tube, 5 mL (T465)
- **Acceptable:** Sterile vial
- **Specimen Volume:** 0.5 mL
- **Collection Instructions:** Do not centrifuge.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87532

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**FHMPV**

**Human Metapneumovirus (hMPV) RNA**

**Specimen Requirements:** Submit only one of the following:
- Nasopharyngeal swab: 3 mL M4 media, V-C-M medium (green-cap) or equivalent UTM shipped refrigerate.
- Nasopharyngeal aspirate: 0.7 mL shipped refrigerate Bronchoalveolar lavage (BAL): 0.7 mL shipped refrigerate
- REQUIRED: Source

**Specimen Minimum Volume:**
- Nasopharyngeal swab: 2 mL
- Nasopharyngeal aspirate or Bronchoalveolar lavage (BAL): 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 30 days

**CPT Code Information:** 87798

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**HPVP**

**Human Papillomavirus (HPV) DNA Detection with Genotyping, High Risk Types by PCR with Papanicolaou Smear Reflex, ThinPrep**

**Specimen Requirements:**
- An acceptable cytology request form must accompany specimen containers and include the following: Patient's name, medical record number, date of birth, sex, source (exact location and procedure used), date specimen was taken, name of ordering physician and pager number. Submit any pertinent history, clinical information, or date of last menstrual period (LMP).
- Original ThinPrep/PreservCyt collection vial is required for testing. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap Test, regardless of the volume of the aliquot (maximum aliquot volume=3 mL).
- For optimal interpretation, Pap smears should be collected near the middle of the menstrual cycle. Avoid douching, lubricant use, and sexual intercourse for 24 hours prior to specimen collection. Specimen source is required. Submit only 1 of the following specimens:
  - Broom Collection Device: (T056)
  - Specimen Type: Cervical (endocervical or ectocervical)
  - Container/Tube: ThinPrep/PreservCyt vial
  - Specimen Volume: 20 mL of solution in ThinPrep/PreservCyt vial
- Collection Instructions:
  1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm water to warm and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times.
  2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. As a final step, swirl broom vigorously to further release material. Discard the collection device.
  3. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial.

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labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). 6. Bag ThinPrep specimens individually as they have a tendency to leak during transport. 7. Place labels on the vial and on the bag. Endocervical Brush/Spatula Collection Device: (T434) Specimen Type: Ectocervix and endocervix Container/Tube: ThinPrep/PreservCyt vial Specimen Volume: 20 mL of solution in ThinPrep/PreservCyt vial Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm water to warm and lubricate the speculum. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatula as quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate 1/4 or 1/2 turn in one direction. Do not over-rotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). 8. Bag ThinPrep specimens individually as they have a tendency to leak during transport. 9. Place labels on the vial and on the bag.

**Specimen Minimum Volume:** 17 mL

**Transport Temperature:**

- Varies Ambient (preferred) 42 days
- Refrigerated 42 days

**CPT Code Information:** 87624; G0476 (if appropriate); 88142 (if appropriate);

### SHPV

**Human Papillomavirus (HPV) DNA Detection with Genotyping, High-Risk Types by PCR, SurePath**

**Specimen Requirements:** Supplies: HPV SurePath Transport Tube 13 mL (T710) Specimen Type: Cervical (endocervical or ectocervical) or vaginal Specimen Volume: 1.5 mL Collection Instructions: 1. Aliquot a minimum of 1 mL SurePath specimen into SurePath HPV aliquot tube. 2. Bag specimens individually as they have a tendency to leak during transport. 3. Place labels on the vial and on the bag.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Varies Ambient (preferred) 14 days
- Refrigerated 14 days

**CPT Code Information:** 87624; G0476 (if appropriate);

### HPV

**Human Papillomavirus (HPV) DNA Detection with Genotyping, High-Risk Types by PCR, ThinPrep**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Cervical (endocervical or ectocervical) Container/Tube: ThinPrep/PreservCyt solution vial Specimen Volume: 3 mL of solution in ThinPrep/PreservCyt vial Collection Instructions: 1. Bag ThinPrep specimens individually as they have a tendency to leak during transport. 2. Place labels on the vial and on the bag. Specimen Type: Vaginal Container/Tube: ThinPrep/PreservCyt solution vial Specimen Volume: 3 mL of solution in ThinPrep/PreservCyt vial Collection Instructions: 1. Bag ThinPrep specimens individually as they have a tendency to leak during transport. 2. Place labels on the vial and on the bag. Additional
Information: This assay is validated but not FDA-approved for vaginal source specimens.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred) 42 days
- Refrigerated 42 days

**CPT Code Information:** 87624; G0476 (if appropriate);

### HPVE6

**Human Papillomavirus (HPV) High-Risk E6/E7, RNA In Situ Hybridization**

**Specimen Requirements:**
- Supplies: Pathology Packaging Kit (T554)
- Specimen Type: Formalin-fixed, paraffin-embedded tissue block
- Specimen Volume: Entire block
- Slides: 5 unstained glass, positively charged slides with 5 (+ or - 1)-microns formalin-fixed, paraffin-embedded tissue

**Transport Temperature:**
- Special Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88365-Primary; 88364-If additional ISH;

### HPVHL

**Human Papillomavirus (HPV) High/Low Risk, DNA In Situ Hybridization**

**Specimen Requirements:**
- Supplies: Pathology Packaging Kit (T554)
- Specimen Type: Formalin-fixed, paraffin-embedded tissue block
- Specimen Volume: Entire block
- Slides: 6 unstained glass, positively charged slides with 5 (+ or - 1)-microns formalin-fixed, paraffin-embedded tissue

**Transport Temperature:**
- Special Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88365-Primary; 88364-If additional ISH;

### HPVLRL

**Human Papillomavirus (HPV) Low Risk, DNA In Situ Hybridization**

**Specimen Requirements:**
- Supplies: Pathology Packaging Kit (T554)
- Specimen Type: Formalin-fixed, paraffin-embedded tissue block
- Specimen Volume: Entire block
- Slides: 5 unstained glass, positively charged slides with 5 (+ or - 1)-microns formalin-fixed, paraffin-embedded tissue

**Transport Temperature:**
**HPVHR 70463**

**Human Papillomavirus (HPV), High-Risk, DNA In Situ Hybridization**

**Specimen Requirements:** Supplies: Pathology Packaging Kit (T554)  
Specimen Type: Formalin-fixed, paraffin-embedded tissue block  
Specimen Volume: Entire block  
Slides: 5 unstained glass, positively charged slides with 5 (± 1)-microns formalin-fixed, paraffin-embedded tissue

**Transport Temperature:**  
Special Ambient (preferred)  
Refrigerated

**CPT Code Information:** 88365-Primary; 88364-If additional ISH;

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**FHPL 91178**

**Human Placental Lactogen (HPL)**

**Specimen Requirements:** Draw blood in a red top tube(s). Separate and send 1 mL of serum frozen in plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
Serum Red Frozen 90 days

**CPT Code Information:** 83632

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**HPL 70462**

**Human Placental Lactogen (HPL) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)  
Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**  
TECHONLY Ambient (preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Human T-Cell Lymphotropic Virus Types I and II (HTLV-I/-II) Antibody Confirmation, Serum

**Specimen Requirements:**
- Collection Container/Tube: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum SST Frozen (preferred)
- Refrigerated 7 days

**CPT Code Information:** 86689

Human T-Cell Lymphotropic Virus Types I and II (HTLV-I/-II) Antibody Screen with Confirmation, Serum

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Frozen (preferred) 28 days
- Refrigerated 7 days

**CPT Code Information:** 86790-HTLV-I/-II; 86689-Confirmation (if appropriate);

Hunter Syndrome, Full Gene Analysis

**Specimen Requirements:**
- Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)
- Acceptable: Any anticoagulant
- Specimen Volume: 3 mL
- Collection Instructions: 1. Invert several times to mix blood.
- 2. Send specimen in original tube.
- Specimen Stability Information: Ambient (preferred)/Refrigerated
- Specimen Type: Cultured fibroblasts
- Container/Tube: T-75 or T-25 flask
- Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks
- Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours
- Specimen Type: Skin biopsy
- Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640).
- The solution should be supplemented with 1% penicillin and streptomycin.
- Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]).
- Specimen Volume: 4-mm punch
- Specimen Stability Information: Refrigerated (preferred)/Ambient
- Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493)
- Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper)
- Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493)
- Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493)
- Collection Instructions: 1. An alternative blood collection option for a patient greater than 1 year of age is finger stick.
- 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours.
- 3. Do not expose specimen to heat or direct sunlight.
- 4. Do not stack wet specimens.
- 5. Keep specimen dry.
- Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.
- 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81405-IDS (iduronate 2-sulfatase) (eg, mucopolysaccharidosis, type II), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin, or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

**Huntington Disease, Molecular Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 81271-HTT (huntingtin) (eg, Huntington disease) gene analysis; evaluation to detect abnormal (eg, expanded) alleles

**Hurler Syndrome, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5, 3-mm diameter

Transport Temperature:
Varies

CPT Code Information: 81406 IDUA (iduronidase, alpha-L-) (eg, mucopolysaccharidosis type I), full gene sequence; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ;

FHMTB Hydrocodone and metabolites
Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days

CPT Code Information: 80361

HYDCU Hydrocodone with Metabolite Confirmation, Urine
Specimen Requirements: Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OPATX / Opiates Confirmation, Chain of Custody, Urine 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine.

Specimen Minimum Volume: 2.5 mL

Transport Temperature:
Urine Refrigerated (preferred) 28 days

CPT Code Information: 80361; G0480 (if appropriate);

HYDMU Hydromorphone Confirmation, Urine
Specimen Requirements: Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information:
1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OPATX / Opiates Confirmation, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 14 days

**CPT Code Information:** 80361; G0480 (if appropriate);

**Hydroxychloroquine, Serum**

**HCQ**

**64947**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 21 days

**CPT Code Information:** 80375; G0480 (if appropriate);

**Hydroxycorticosterone, 18**

**HYD18**

**80744**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: Separate serum from cells within 1 hour of collection.

**Specimen Minimum Volume:** Pediatric minimum only: 1.0 mL/NOTE: Minimum volume does not allow for repeat analysis.

**Transport Temperature:**
- Serum Frozen (preferred) 90 days
  - Refrigerated 48 hours
  - Ambient 24 hours

**CPT Code Information:** 82542

**Hydroxyglutaric Acids, Glutaric Acid, Ethylmalonic Acid, and Methylsuccinic Acid, Blood Spot**

**HGEM**

**62230**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Requirements:
Supplies: Card-Blood Spot Collection (Filter Paper) (T493)
Container/Tube: Preferred: Card-Blood Spot Collection (Filter Paper) (T493) from heel or finger stick
Acceptable: Ahlstrom 226 filter paper, Munktell filter paper, Whatman Protein Saver 903 paper, available newborn screening card, blood collected in tubes containing heparin or EDTA and dried on filter paper
Specimen Volume: 2 blood spots
Collection Instructions:
1. Do not use device or capillary tube containing ACD to collect specimen. Sodium heparin or EDTA are acceptable, but must be spotted on card the same day as collected.
2. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle).
3. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours.
4. Do not stack wet specimens.
5. Do not expose specimen to heat or direct sunlight.
Additional Information:
1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.
2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: 1 blood spot

Transport Temperature:
Whole blood
Ambient (preferred) 123 days
Frozen 123 days
Refrigerated 123 days

CPT Code Information: 83918

HGEMP 62300

Hydroxyglutaric Acids, Glutaric Acid, Ethylmalonic Acid, and Methylsuccinic Acid, Plasma

Specimen Requirements:
Collection Container/Tube: Preferred: Green top (sodium heparin)
Acceptable: Lavender top (EDTA) plasma
Submission Container/Tube: Plastic vial
Specimen Volume: 0.1 mL

Specimen Minimum Volume: 0.02 mL

Transport Temperature:
Plasma
Refrigerated (preferred) 90 days
Frozen 90 days
Ambient 12 days

CPT Code Information: 83918

HGEMS 62231

Hydroxyglutaric Acids, Glutaric Acid, Ethylmalonic Acid, and Methylsuccinic Acid, Serum

Specimen Requirements:
Container/Tube: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.1 mL

Specimen Minimum Volume: 0.02 mL

Transport Temperature:
Serum
Red Refrigerated (preferred) 90 days
Frozen 90 days
Ambient 4 days
FVIST
Hydroxyzine (Vistaril, Atarax), Serum
Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.6 mL
Transport Temperature:
Varies Refrigerated (preferred) 7 days
  Frozen 180 days
  Ambient 72 hours

HYOX
Hyperoxaluria Panel, Urine
Specimen Requirements: Patient Preparation: Fasting-overnight (12-14 hours). Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Have patient void the first-morning specimen, then collect specimen within 2 hours of first-morning void while patient continues to fast. Fluids are allowed. 2. No preservative. 3. Immediately freeze specimen.
Specimen Minimum Volume: 1.1 mL
Transport Temperature:
Urine Frozen (preferred) 90 days
  Refrigerated 14 days

FAVI
Hypersensitivity Pneumonitis Avian Panel
Specimen Requirements: Draw blood in a Red-top tube(s). Serum-gel tube(s) is also acceptable. Spin down and send 3 mL of serum refrigerated.
Specimen Minimum Volume: 3 mL
Transport Temperature:
Serum Refrigerated (preferred) 365 days
  Frozen 365 days
  Ambient 24 hours

CPT Code Information: 83918
CPT Code Information: 80375
CPT Code Information: 82542
CPT Code Information: 86331x5
Hypersensitivity Pneumonitis FEIA Panel II

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Collection instructions: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.6 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)
- Ambient
- Frozen

**CPT Code Information:** 86001 x 8

Hypersensitivity Pneumonitis Panel, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86606; 86609 x 2;

Hypertrophic Cardiomyopathy Multi-Gene Panel, Blood

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred)
- Refrigerated

**CPT Code Information:** 81439

Hypoglycemic Agent Screen, Serum

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 3 mL

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
Serum
Red Frozen (preferred) 14 days
Ambient 14 days
Refrigerated 14 days

CPT Code Information: 80307

**HIF2A**

**Hypoxia-Inducible Factor Alpha (EPAS1/HIF2A) Gene, Exons 9 and 12 Sequencing**

**Specimen Requirements:** Only orderable as part of a profile. For more information see HEMP / Hereditary Erythrocytosis Mutations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Whole blood Refrigerated 30 days

CPT Code Information: 81479-Unlisted molecular pathology procedure

**FIBUP**

**Ibuprofen (Motrin, Advil, Nuprin), serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days

	Frozen 180 days

	Ambient 72 hours

CPT Code Information: 80329;

**ICOSI**

**ICOS (CD278), Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1 mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
	Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
Id MALDI-TOF Mass Spec AFB (Bill Only)
Specimen Requirements: **For billing purposes only
Transport Temperature:
Varies

CPT Code Information: 87118

Id MALDI-TOF Mass Spec Anaerobe (Bill Only)
Specimen Requirements: **For billing purposes only
Transport Temperature:
Varies

CPT Code Information: 87076

Id, Histoplasma/Blastomyces PCR (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87150 x 2

Ident by MALDI-TOF Mass Spec (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87077

Ident Rapid PCR Coccidioides (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies

CPT Code Information: 87150

Identification by PCR (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
**RTBSP 60768**

**Identification Mycobacterium tuberculosis Complex Speciation, PCR (Bill Only)**

**Specimen Requirements:** **For billing purposes only**

**Transport Temperature:**

Varies

**CPT Code Information:** 87798

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**STAP 45362**

**Identification Staphylococcus (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87077

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**STRP 45371**

**Identification Streptococcus (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87077

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**COMM 45070**

**Identification, Commercial Kit**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87077

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**IDH1 70468**

**IDH1 Mutation (R132H) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained
positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**I2SBS**

**Iduronate-2-Sulfatase, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood spot collection card (T493) Acceptable: Ahlstrom 226 filter paper, Munktell TFN, and Whatman Protein Saver 903 Paper Specimen Volume: 2 blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is fingerstick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**
Whole blood Ambient (preferred) 90 days
Frozen 90 days
Refrigerated 90 days

**CPT Code Information:** 82657

**I2SW**

**Iduronate-2-sulfatase, Whole Blood**

**Specimen Requirements:** Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Whole blood Ambient (preferred) 7 days
Refrigerated 7 days

**CPT Code Information:** 82657

**IFPCA**

**IF Additional (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient (preferred)
**Refrigerated**

**CPT Code Information:** 88350

**IFPCI** 113303  
**IF Initial (Bill Only)**  
**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.  
**Transport Temperature:**  
Varies - Ambient (preferred)  
Refrigerated

**CPT Code Information:** 88346

**IGAI** 70470  
**IgA Immunostain, Technical Component Only**  
**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block  
**Transport Temperature:**  
TECHONLY - Ambient (preferred)  
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**IGAS** 87938  
**IgA Subclasses, Serum**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Ambient 7 days  
Frozen 7 days

**CPT Code Information:** 82784-IgA; 82787 x 2-Immunoglobulin subclasses;

**IGDI** 70471  
**IgD Immunostain, Technical Component Only**  
**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FGERA 75346**

**IgE Receptor Antibody**

**Specimen Requirements:** Container/Tube: Preferred: Red top tube Acceptable: Serum gel tube
Specimen Volume: 1.0 mL
Collection Instructions: Draw blood in a plain, red-top tube(s) or serum gel tube(s). Separate serum from cells immediately by centrifugation and aliquot into a polypropylene or similar plastic tube. Send 1 mL of serum frozen in plastic vial. Complete and submit with specimen: 1. National Jewish Immunology Diagnostics request form. 2. Patient's date of birth is required on the National Jewish Immunology Diagnostics request form

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Frozen (preferred) 365 days
Refrigerated 7 days
Ambient 48 hours

**CPT Code Information:** 88184; 88185 x 2;

**FIGBP 57131**

**IGF Binding Protein-1 (IGFBP-1)**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Spin down and separate within one hour. Ship 0.5 mL frozen in a plastic vial.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
Serum Red Frozen 200 days

**CPT Code Information:** 83519

**IGGI 70473**

**IgG Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated
**IgG Subclasses, Serum**

**Specimen Requirements:**
- **Patient Preparation:** Fasting preferred but not required
- **Container/Tube:** Preferred: Serum gel Acceptable: Red top
- **Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**SUBIF**

**IGG Subtypes Immunofluorescence, (IGG1, IGG2, IGG3, IGG4), Tissue**

**Specimen Requirements:**
- **Supplies:** Renal Biopsy Kit (T231)
- **Specimen Type:** Kidney tissue
- **Container/Tube:** Renal Biopsy Kit (T231), Zeus/Michel's, Frozen
- **Preferred:** Frozen
- **Acceptable:** 4 frozen tissue unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick.
- **Specimen Volume:** Entire specimen

**Collection Instructions:** Collect specimens according to the instructions in Renal Biopsy-Procedures of Handling Tissue for Light Microscopy, Immunohistology, and Electron Microscopy in Special Instructions. Additional Information: If standard immunoglobulin and complement immunofluorescence has already been performed, submit the residual frozen tissue (must contain glomeruli) on dry ice.

**Transport Temperature:**
- Special Frozen (preferred)
- Ambient
- Refrigerated

**CPT Code Information:** 82784; 82787 x 4;

**CASF**

**IgG/Albumin Ratio, Spinal Fluid**

**Specimen Requirements:**
- **Collection Container/Tube:** Sterile vial

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 82042-Albumin; 82784-IgG;
IgG4 Food Panel I
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days
CPT Code Information: 86001 X 10

IgG4 Food Panel II
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days
CPT Code Information: 86001 x 9; ;

IgG4 Food Panel VIII
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days
CPT Code Information: 86001 x 6

IgG4 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

IGH Somatic Hypermutation Analysis, B-Cell Chronic Lymphocytic Leukemia (B-CLL)

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Peripheral blood Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

Specimen Minimum Volume: Blood or Bone Marrow: 1 mL

Transport Temperature:
Varies Refrigerated (preferred) 72 hours
Ambient 72 hours

CPT Code Information: 81263-IGH (immunoglobulin heavy chain locus) (eg, leukemia and lymphoma, B-cell), variable region somatic mutation analysis

IgM Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

IHC Additional (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient
(preferred)
Refrigerated
CPT Code Information: 88341

IHA26 113300  IHC Additional, Professional Only (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
  Varies Ambient
    (preferred)
  Refrigerated

CPT Code Information: 88341-26

IHTOA 113209  IHC Additional, Tech Only (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
CPT Code Information: 88341-TC

IHPCI 113297  IHC Initial (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
  Varies Ambient
    (preferred)
  Refrigerated

CPT Code Information: 88342

IHC26 113299  IHC Initial, Professional Only (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
  Varies Ambient
    (preferred)
  Refrigerated

CPT Code Information: 88342-26

IHTOI 113208  IHC Initial, Tech Only (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
  Varies Ambient
    (preferred)
  Refrigerated
CPT Code Information: 88342-TC

**IHMPC 113301**

**IHC Multiplex (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies Ambient  
(preferred)

Refrigerated

---

CPT Code Information: 88344

**IHM26 113302**

**IHC Multiplex, Professional Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies Ambient  
(preferred)

Refrigerated

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CPT Code Information: 88344-26

**IHMTO 113211**

**IHC Multiplex, Tech Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies Ambient  
(preferred)

Refrigerated

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CPT Code Information: 88344-TC

**IMRGF 35276**

**Imatinib Mesylate Responsive Genes, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL
**Transport Temperature:**
Varies Ambient (preferred) Refrigerated

**CPT Code Information:** 88271, 88271x2, 88271x2 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**IMIPR**
63508

**Imipramine and Desipramine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

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<tr>
<td>Ambient</td>
<td>7</td>
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**CPT Code Information:** 80335; G0480 (if appropriate);

**IMFXO**
32436

**Immunofixation Only, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: Fasting

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

<table>
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<th>Days</th>
</tr>
</thead>
<tbody>
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<td>Ambient</td>
<td>14</td>
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<tr>
<td>Frozen</td>
<td>14</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 86334

**FIMM**
91507

**Immunofixation, CSF**

**Specimen Requirements:** Collect 3 mL of spinal fluid (CSF), in a sterile screw cap container. Ship frozen.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
CSF Frozen (preferred) 30 days
Refrigerated 5 days

CPT Code Information: 86335

**IMFX**

**Immunofixation, Serum**

**Specimen Requirements:** Only orderable as part of a profile. See MPSS / Monoclonal Protein Study, Serum.

**Specimen Minimum Volume:** 1 mL for profile MPSS / Monoclonal Protein Study, Serum

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 86334

**IGA**

**Immunoglobulin A (IgA), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82784

**IGD**

**Immunoglobulin D (IgD), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Ambient 21 days
- Frozen 21 days

**CPT Code Information:** 82784
**Immunoglobulin E (IgE), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** For total IgE: 0.3 mL; for total IgE and more than 1 allergen: 0.05 mL x number of allergen-specific IgEs + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 82785

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**Immunoglobulin Free Light Chains, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 21 days
  - Ambient 72 hours

**CPT Code Information:** 83883 x 2

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**Immunoglobulin G (IgG), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 82784

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**Immunoglobulin Gene Rearrangement, Blood**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days

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Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com
**BCGBM**  
**Immunoglobulin Gene Rearrangement, Bone Marrow**  
**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top)  
Specimen Volume: 2 mL  
Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube.  
**Specimen Minimum Volume:** 1 mL  
**Transport Temperature:**  
Bone Marrow: Ambient (preferred) 7 days  
Refrigerated: 7 days  

**CPT Code Information:**  
81261-IGH (Immunoglobulin heavy chain locus) (eg, leukemias and lymphomas B-cell), gene rearrangement analysis to detect abnormal clonal populations; amplified methodology (eg, polymerase chain reaction); 81264-IGK (Immunoglobulin kappa light chain locus) (eg, leukemia and lymphoma, B-Cell) gene rearrangement analysis, evaluation to detect abnormal clonal populations;

**BCGRV**  
**Immunoglobulin Gene Rearrangement, Varies**  
**Specimen Requirements:** Submit only 1 of the following specimens:  
Specimen Type: Body fluid  
Container/Tube: Sterile container  
Specimen Volume: At least 5 mL  
Collection Instructions: 1. If the volume is large, pellet cells prior to sending. 2. Send less volume at ambient temperature or as a frozen cell pellet.  
Specimen Stability Information: Body Fluid: Ambient/Refrigerated/Frozen Cell Pellet: Frozen  
Specimen Type: Paraffin-embedded bone marrow aspirate clot  
Container/Tube: Paraffin block  
Specimen Volume: 100 mg  
Collection Instructions: Freeze tissue within 1 hour of collection.  
Specimen Stability Information: Frozen  
Specimen Type: Paraffin-embedded tissue  
Container/Tube: Plastic container  
Specimen Volume: 100 mg  
Collection Instructions: Freeze tissue within 1 hour of collection.  
Specimen Stability Information: Plastic  
Specimen Type: Tissue Slides: Unstained  
Specimen Volume: 10 Slides  
Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of DNA  
Specimen Stability Information: Refrigerated/Ambient  

**Specimen Minimum Volume:** Body and spinal fluid: 1 mL  
Tissue: 50 mg  
Extracted DNA from blood or bone marrow: 50 microliters (mcL) at 20 ng/mcL  

**Transport Temperature:**  
Varies  

**CPT Code Information:** 81261-IGH (Immunoglobulin heavy chain locus) (eg, leukemias and lymphomas B-cell), gene rearrangement analysis to detect abnormal clonal populations; amplified methodology (eg, polymerase chain reaction); 81264-IGK (Immunoglobulin kappa light chain locus)
(eg, leukemia and lymphoma, B-cell) gene rearrangement analysis, evaluation to detect abnormal clonal populations;

**HLCA 61719**  
**Immunoglobulin Heavy and Light Chain (HLC) Pairs, IgA Kappa and IgA Lambda**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 28 days

- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82784; 83883 x 2; ;

**HLCG 61722**  
**Immunoglobulin Heavy and Light Chain (HLC) Pairs, IgG Kappa and IgG Lambda**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 28 days

- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82784; 83883 x 2;

**IGM 8158**  
**Immunoglobulin M (IgM), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top  
Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 28 days

- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82784

**IGGS4 84250**  
**Immunoglobulin Subclass IgG4, Serum**
**Specimen Requirements:** Patient Preparation: Fasting preferred but not required

**Container/Tube:** Preferred: Serum gel Acceptable: Red top

**Specimen Volume:** 1 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 82787

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**Immunoglobulin Total Light Chains, Urine**

**Specimen Requirements:** If serum is being submitted on the same patient for FLCP / Immunoglobulin Free Light Chains, Serum; order that test under a different order. Submit only 1 of the following specimens:

- Specimen Type: Random urine
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 1 mL

Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 7 days
- Frozen 20 days
- Ambient 72 hours

**CPT Code Information:** 83883 x 2

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**Immunoglobulins (IgG, IgA, and IgM), Serum**

**Specimen Requirements:**

- Container/Tube: Preferred: Serum gel
- Acceptable: Red top

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 82784 x 3

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**Immunoglobulins, CSF Quantitative**

**Specimen Requirements:** Submit 1 mL of spinal fluid (CSF), centrifuge and separate to remove cellular material. Send refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL
Transport Temperature:
CSF Refrigerated (preferred) 8 days

Frozen 365 days
Ambient 8 hours

CPT Code Information: 82784-Immunoglobulin IgA; 82784-Immunoglobulin IgG; 82784-Immunoglobulin IgM;

Infantile Spasms Panel (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81404 x 2; 81405; 81406 x 4; 81407; 81408; 81479;

Infectious Mononucleosis, Rapid Test, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days

Frozen 14 days

CPT Code Information: 86308

Inflammatory Bowel Disease Primary Immunodeficiency (PID) Panel
Specimen Requirements: Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume:
4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur.
Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube.
Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 81479

### IBDP 81443

**Inflammatory Bowel Disease Serology Panel, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86255; 86671 x 2;

### IMTF 35277

**Inflammatory Myofibroblastic Tumors (IMT), 2p23 (ALK) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
**INFXR 63437**

**Infliximab Quantitation with Reflex to Antibodies to Infliximab, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose (trough specimen). 2. Centrifuge within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red: Frozen (preferred) 28 days
- Refrigerated: 28 days

**CPT Code Information:** 80299

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**SFLA 8169**

**Influenza Virus A Antibodies, IgG and IgM (Separate Determinations), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.25 mL Collection Instructions: Indicate influenza virus A

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred): 14 days
- Frozen: 14 days

**CPT Code Information:** 86710 x 2

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**SFLB 8175**

**Influenza Virus B Antibodies, IgG and IgM (Separate Determinations), Serum**

**Specimen Requirements:** Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.25 mL Collection Instructions: Indicate influenza virus B.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred): 14 days
- Frozen: 14 days

**CPT Code Information:** 86710 x 2

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**FLUMS 62668**

**Influenza Virus Type A and Type B, and Respiratory Syncytial Virus (RSV), Molecular Detection, PCR, Miscellaneous Sources**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Nasal or nasopharyngeal aspirate Container/Tube: Sterile container Specimen Volume: 0.5 mL Specimen Type: Throat or nasal swab Supplies: Culturette (BBL Culture Swab) (T092) Container/Tube: Sterile container with viral transport media Collection Instructions: 1. Collect specimen by swabbing back and
forth over mucosa surface to maximize recovery of cells. 2. Swab must be placed in viral transport media (for example, M4-RT, M4, or M5 media); BBL Culture Swab (T092) container includes a stabilizing media. Acceptable: Specimen Type: Nasopharyngeal washing Container/Tube: Sterile container Specimen Volume: 0.5 mL Specimen Type: Bronchial washing or bronchoalveolar lavage fluid Container/Tube: Sterile container Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87631

**FLUNP**

**62669**

**Influenza Virus Type A and Type B, and Respiratory Syncytial Virus (RSV), Molecular Detection, PCR, Nasopharyngeal Swab**

**Specimen Requirements:** Supplies: Nasopharyngeal Swab (Rayon Mini-Tip Swab) (T515) M4-RT (T605) Specimen Type: Nasopharyngeal swab Container/Tube: Sterile container with viral transport media Collection Instructions: 1. Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells. 2. Swab must be placed in viral transport media (for example, M4-RT (T605), M4, or M4 media).

**Specimen Minimum Volume:** Nasopharyngeal swab submitted in minimum volume of 0.3 mL of viral transport media (eg, M4-RT)

**Transport Temperature:**

- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87631

**INHAB**

**86336**

**Inhibin A and B, Tumor Marker, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

CPT Code Information: 83520-Inhibin B; 86336-Inhibin A;

**INHA**

**81049**

**Inhibin A, Tumor Marker, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

CPT Code Information: 83520-Inhibin B; 86336-Inhibin A;
**Inhibin B, Serum**  
*Inhibin B, Serum*  
**Specimen Requirements:**  
- Container/Tube: Preferred: Red top  
- Acceptable: Serum gel  
- Specimen Volume: 0.4 mL  
**Specimen Minimum Volume:** 0.2 mL  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 7 days  
- Frozen 90 days  
**CPT Code Information:** 86336

**Inhibin Immunostain, Technical Component Only**  
*Inhibin Immunostain, Technical Component Only*  
**Specimen Requirements:**  
- Supplies: Immunostain Technical Only Envelope (T693)  
- Specimen Type: Tissue  
- Container/Tube: Immunostain Technical Only Envelope (T693)  
- Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block  
**Transport Temperature:**  
- TECHONLY Ambient (preferred)  
- Refrigerated  
**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Insulin (Human), IgE**  
*Insulin (Human), IgE*  
**Specimen Requirements:**  
- Container/Tube: Preferred: Red top  
- Acceptable: Serum gel  
- Specimen Volume: 0.5 mL for each 5 allergens requested  
**Additional Information:** Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 14 days  
- Frozen 90 days  
**CPT Code Information:** 86003
Insulin Antibodies, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 86337

Insulin Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Insulin, Free and Total, Serum

**Specimen Requirements:** Patient Preparation: 1. Fasting (8 hours) 2. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Avoid hemolysis 2. Label specimens with corresponding draw times. 3. Serum-gel tubes should be centrifuged within 2 hours of collection. 4. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. 5. Send frozen to laboratory Additional Information: If multiple specimens are drawn, send separate order for each specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 180 days
- Refrigerated 7 days

**CPT Code Information:** 83527-Free Insulin; 83525-Total Insulin;

Insulin, Serum

**Specimen Requirements:** Patient Preparation: 1. Patient should be fasting. 2. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which
is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube:
Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Avoid hemolysis 2. Label specimens with corresponding draw times. 3. Serum-gel tubes should be centrifuged within 2 hours of collection. 4. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: If multiple specimens are drawn, send separate order for each specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Frozen (preferred) 180 days
Refrigerated 7 days

**CPT Code Information:** 83525-Each

**IGFGP 36365**

**Insulin-Like Growth Factor 1 (IGF1), LC-MS and Insulin-Like Growth Factor-Binding Protein 3 (IGFBP3) Growth Panel**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down promptly. Aliquot into 2 equal portions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Frozen 14 days

**CPT Code Information:** 83520-IGFBP3; 84305-IGFMS;

**FIGF2 80758**

**Insulin-like Growth Factor 2 (IGF-2)**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Separate within 1 hour of collection, freeze immediately. Send 0.5 mL serum frozen. Note: 1. Serum gel tube is okay, but must pour off into a plastic screw cap vial and freeze. 2. Minimum volume does not permit for repeat analysis

**Specimen Minimum Volume:** 0.1 mL NOTE: Minimum volume does not allow for repeat analysis.

**Transport Temperature:**
Serum Frozen 200 days

**CPT Code Information:** 83519

**IGFMS 62750**

**Insulin-Like Growth Factor-1, LC-MS, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Frozen (preferred) 28 days
IGFB3 83300

**Insulin-Like Growth Factor-Binding Protein 3 (IGFBP-3), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.8 mL Collection Instructions: Spin down promptly.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Frozen (preferred) 14 days
- Refrigerated 24 hours

**CPT Code Information:** 84305

INSM1 602573

**Insulinoma-Associated Protein 1 (INSM1), Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Preferred: 2 Unstained, positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 83520

INI1 70477

**Integrase Interactor 1 (INI1/BAF47) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**Interferon-gamma (IFN-y) Serum**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Frozen 365 days

**CPT Code Information:** 83520

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**Interleukin 1a**

**Specimen Requirements:** Submit one of the following: Serum Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 3 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL serum in a screw-capped vial, shipped frozen. Plasma Specimen Type: Plasma Container/Tube: lavender-top EDTA tube Specimen Volume: 3 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). Spin down as soon as possible and send 3 mL of EDTA plasma frozen in a plastic vial. Patient Preparation: Patient should not be on any Corticosteroids, anti-inflammatory medications or pain killers, if possible, for at least 48 hours prior to collection of specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Frozen 30 days

**CPT Code Information:** 83519

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**Interleukin 1b**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Specimen Type: Serum Container/Tube: Red Specimen Volume: 3 mL Collection Instructions: Draw blood in a plain, red-top tube(s), serum-gel tube(s) is acceptable. Separate immediately and send 3 mL of serum frozen in a plastic vial. Plasma Specimen Type: Plasma Container/Tube: EDTA Lavender Top Specimen Volume: 3 mL Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). Separate immediately and send 3 mL of EDTA plasma frozen in a plastic vial. Patient preparation: Patient should NOT be on any Corticosteroids, anti-inflammatory medications or pain killers, if possible, for at least 48 hours prior to collection of specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Frozen 30 days

**CPT Code Information:** 83519

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**Interleukin 2**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial. Plasma Draw blood in a green-top (lithium heparin) tube(s), plasma gel tube(s) is acceptable. Spin down and send 1 mL lithium heparin plasma frozen in a plastic vial. Separate specimens must be
submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Frozen 365 days

**CPT Code Information:** 83520

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**INTERLEUKIN 2 RECEPTOR (CD25), SOLUBLE**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red Specimen Volume: 1 mL Submit only 1 of the following specimens: Serum: Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down within 2 hours of collection and freeze immediately. Send 1 mL of serum frozen in a plastic vial. Separate specimens must be submitted when multiple test are ordered. Plasma Collection Instructions: Draw blood in a green-top (lithium heparin) tube(s), plasma gel tube is acceptable. Spin down within 2 hours of collection and freeze immediately. Send 1 mL lithium heparin plasma frozen in a plastic vial. Separate specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Frozen 365 days

**CPT Code Information:** 83520

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**INTERLEUKIN 28B (IL28B) VARIANT (rs12979860), VARIES**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit (T786: fees apply) Specimen Volume: One swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**
Varies

**CPT Code Information:** 81283

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**INTERLEUKIN 5, PLASMA**

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission

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Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate plasma from cells; 1,500 x g for 10 minutes. 3. Freeze specimen within 30 minutes

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 21 days
Refrigerated 24 hours

**CPT Code Information:** 83520

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**IL6**

**Interleukin 6 (IL-6), Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender-top (EDTA) Submission
Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate plasma from cells; 1,500 x g for 10 minutes. 3. Freeze specimen within 30 minutes

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Plasma EDTA Frozen (preferred) 21 days
Refrigerated 24 hours

**CPT Code Information:** 83520

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**FIL1S**

**Interleukin-10 (IL-10) Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Frozen 365 days

**CPT Code Information:** 83520

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**FIL4S**

**Interleukin-4 (IL-4) Serum**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Frozen 365 days

**CPT Code Information:** 83520
**Interleukin-8 (IL-8) Serum**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Frozen 28 days

**CPT Code Information:** 83520

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**Intrinsic Factor Blocking Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Additional Information: This test should not be ordered on patients who have received vitamin B12 injection within the last 2 weeks.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 86340

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**Iodine, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. 3. If this test is used in conjunction with the (131)I uptake test, then specimen collection should begin immediately after the dose of (131)I is given (ie, the patient should void and discard urine just prior to the (131)I, and all subsequent urine should be collected for the next 24 hours). The last void should be included in the collection.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 146 days

Ambient 146 days

Frozen 146 days

**CPT Code Information:** 83789

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**Iodine, Random, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container
Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 1 mL. Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 146 days
- Ambient 146 days
- Frozen 146 days

**CPT Code Information:** 83789

**Iodine, Serum**

**Specimen Requirements:** Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184). Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173). Specimen Volume: 1 mL. Collection Instructions: 1. Allow specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Ambient 21 days
- Frozen 21 days

**CPT Code Information:** 83789

**Iodine/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container. Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 2 mL. Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days
HEXP 61713

**Iohexol, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Green top (heparin) Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Heparin Refrigerated (preferred) 7 days
- Frozen 35 days

CPT Code Information: 82542

HEXU 61712

**Iohexol, Timed Collection, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: Collect a timed urine specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 35 days

CPT Code Information: 82542

FIPEC 91134

**Ipecac Use Markers**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

CPT Code Information: 80323

FEC 34624

**Iron and Total Iron-Binding Capacity, Serum**

**Specimen Requirements:** Patient Preparation: 1. Fasting (12 hours) 2. Iron-containing supplements should be avoided for 24 hours prior to draw. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw blood before 12 noon
(preferred). 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 7 days
- Frozen: 180 days

**CPT Code Information:** 83540-Iron; 83550-Iron-binding capacity;

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**FET**

**Iron, Liver Tissue**

**Specimen Requirements:** Supplies: Metal Free Specimen Vial (T173) Container/Tube: Preferred: Mayo metal-free specimen vial (blue label) (T173) Acceptable: Paraffin block, if not more than 1 or 2 cuts have been made to it for slides. Specimen Volume: 2 mg Collection Instructions: 1. Two mg of liver tissue is required. This is typically a piece of tissue from a 22-gauge needle biopsy at least 2 cm long. If an 18-gauge needle is used, the tissue must be at least 1 cm in length. 2. Any specimen vial other than a Mayo metal-free vial used should be plastic, leached with 10% nitric acid for 2 days, rinsed with redistilled water, and dried in clean air. Additional Information: Paraffin blocks will be returned 3 days after analysis.

**Specimen Minimum Volume:** 2 cm (22-gauge needle), 1 cm (18-gauge needle), or 2 mm x 2 mm (punch) 0.3 mg by dry weight

**Transport Temperature:**
- Liver Tissue: Refrigerated (preferred)
- Ambient
- Frozen

**CPT Code Information:** 83540

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**ISPCA**

**ISH Additional (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88364

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**ISA26**

**ISH Additional, Professional Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
Refrigerated

**CPT Code Information:** 88364-26

**ISTA**
113217

**ISH Additional, Tech Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88364-TC

**ISPCI**
113305

**ISH Initial (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88365

**ISH26**
113307

**ISH Initial, Professional Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88365-26

**ISTOI**
113216

**ISH Initial, Tech Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88365-TC
**ISLET 70479**

**Islet 1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**IA2 89588**

**Islet Antigen 2 (IA-2) Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

**CPT Code Information:** 86341

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**FISLC 57306**

**Islet Cell Cytoplasmic Ab, IgG**

**Specimen Requirements:** Draw blood in a serum gel tube(s), plain red-top tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 365 days
Ambient 48 hours

**CPT Code Information:** 86341

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**ATR 113383**

**Isoagglutinin Titer, Anti-A, Serum**

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Serum Aliquot tube Specimen Volume: 2.5 mL Pediatric Volume: 2 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Isoagglutinin Titer, Anti-B, Serum

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Serum Aliquot tube Specimen Volume: 2.5 mL Pediatric: 2 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Red: Ambient (preferred) 4 days
- Frozen: 10 days
- Refrigerated: 10 days

**CPT Code Information:** 86886

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Isocitrate Dehydrogenase 1 and 2 (IDH1/IDH2) Mutation Analysis, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Specimen Type: Slides Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nonbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (direct smears or ThinPrep) Slides: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** See Specimen Required field.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** IDH1: 81120; 88381; IDH2: 81121; 82773

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Isocyanate HDI, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL deadspace
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**IMDI**
**Isocyanate MDI, IgE**
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL deadspace

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**ITDT**
**Isocyanate TDI, IgE**
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL deadspace

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**FINHP**
**Isoniazid, Serum/Plasma**
**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum frozen in plastic vial. Plasma Draw blood in a lavender-top or pink-top (EDTA) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL of EDTA plasma frozen in plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Varies Frozen 120 days

**CPT Code Information:** 80375
Isovaleryl-CoA Dehydrogenase (IVD) Gene Mutation Analysis (A282V)

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81400-IVD (isovaleryl-CoA dehydrogenase) (eg, isovaleric acidemia), A28SV variant

Ispaghula, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Itraconazole, Serum

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.18 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 29 days
- Ambient 29 days
- Frozen 29 days

**CPT Code Information:** 80299
J-Chain Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Jack Fruit, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Jack Mackerel, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

JAK2 (9p24.1) Rearrangement for Hematologic Disorders, FISH

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.
**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**
- Varies
  - Ambient (preferred)
  - Refrigerated

**CPT Code Information:**
- 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**JAKXB**

**JAK2 Exon 12 and Other Non-V617F Mutation Detection, Blood**

**Specimen Requirements:**
- Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top)
- Specimen Volume: 4 mL
- Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 5 days
  - Ambient 5 days

**CPT Code Information:**
- 0027U-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder), exon 12 sequence and exon 13 sequence, if performed

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**JAKXM**

**JAK2 Exon 12 and Other Non-V617F Mutation Detection, Bone Marrow**

**Specimen Requirements:**
- Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top)
- Specimen Volume: 2 mL
- Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Bone Marrow Refrigerated (preferred) 5 days
  - Ambient 5 days

**CPT Code Information:**
- 0027U-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder), exon 12 sequence and exon 13 sequence, if performed

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**JAKXR**

**JAK2 Exon 12-15 Sequencing, Polycythemia Vera Reflex**

**Specimen Requirements:** Only orderable as a reflex. For more information, see PVJAK / Polycythemia Vera, JAK2 V617F with Reflex to JAK2 Exon 12-15, Sequencing for Erythrocytosis.
**Specimen Minimum Volume:** Blood, Bone marrow: 0.5 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 5 days
- Ambient 5 days

**CPT Code Information:** 0027U-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder), exon 12 sequence and exon 13 sequence, if performed

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### JAK2B 88715

**JAK2 V617F Mutation Detection, Blood**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81270-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder) gene analysis, p.Val617Phe (V617F) variant

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### JAK2M 31155

**JAK2 V617F Mutation Detection, Bone Marrow**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Bone Marrow Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81270-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder) gene analysis, p.Val617Phe (V617F) variant

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### JAK2V 31156

**JAK2 V617F Mutation Detection, Varies**

**Specimen Requirements:** Specimen Type: Extracted DNA from blood or bone marrow
Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and indicate volume and concentration of the DNA. Specimen Stability Information: Refrigerated/Ambient

**Specimen Minimum Volume:** Extracted DNA from blood or bone marrow: 50 microliter at 20 ng/microliter

**Transport Temperature:**
- Varies Varies
**CPT Code Information:** 81270-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder) gene analysis, p.Val617Phe (V617F) variant

**FJPE 57921**

**Jalapeno/Chipotle (Capsicum annuum) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

**JCEDR 82865**

**Japanese Cedar, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**JMLIL 82831**

**Japanese Millet, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FJCV 81827**

**JC Polyoma Virus DNA, Quantitative Real-Time PCR, Plasma**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Plasma (Preferred) Container/Tube: Lavender-top (EDTA) tube or Yellow-top (ACD-A) tube(s). Specimen volume: 0.7 mL. Collection Instructions: Draw blood in a Lavender-top (EDTA) tube or yellow-top (ACD-A) tube(s). Spin down and transfer 0.7 mL EDTA or ACD-A plasma to a screw-cap plastic vial. Submit frozen. Specimen Type: Serum Container/Tube: Red-top tube, serum gel is acceptable Specimen volume: 0.7 mL. Collection instructions: Draw blood in a plain, red-top tube(s), serum gel tube is acceptable. Spin down and transfer 0.7 mL serum to a screw-top plastic vial. Submit frozen.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Frozen (preferred) 30 days
- Refrigerated 7 days
- Ambient 48 hours

**CPT Code Information:** 87799

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**JC Virus Detection by In Situ Hybridization**

**Specimen Requirements:** Specimen Type: Formalin-fixed, paraffin-embedded tissue block Supplies: Pathology Packaging Kit (T554) Specimen Volume: Entire block Specimen Type: Slides Slides: 4 Unstained glass, positively charged slides with 5 (+ or - 1)-microns formalin-fixed, paraffin-embedded tissue

**Transport Temperature:**
- Special Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88365-Primary; 88364-If additional ISH;

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**JC Virus, Molecular Detection, PCR, Spinal Fluid**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Preferred: 12 x 75-mm screw cap vial (T465) Acceptable: Sterile screw cap vial Container/Tube: Sterile vial Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798

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**Jo 1 Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

**CPT Code Information:** 86235

**Johnson Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**June Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**Juniper Western (Juniperus occidentalis) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003
Kappa and Lambda Free Light Chains (Bence Jones Protein), Quantitative, Urine

**Specimen Requirements:** Specimen Type: Urine Submission Container/Tube: Two, Plastic 6-mL tube(s) (MML Supply T465) Specimen Volume: 8 mL (Two, 6 mL tubes) Collection Instructions: 1. Collect urine for 24 hours (NO preservative). 2. Refrigerate specimen during the 24-hour collection. 3. Send specimen refrigerate in 2 plastic, 6-mL urine tube(s), (MML Supply T465) 4. Collection volume and duration are required.

**Specimen Minimum Volume:** 4 mL (2 vials 2 mL each)

**Transport Temperature:**
Urine Refrigerated (preferred) 7 days
Ambient 2 hours

**CPT Code Information:** 83883/x2; 84156; 86335;

Kappa and Lambda Light Chain mRNA, In Situ Hybridization (ISH) Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 5 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88365-TC, primary; 88364-TC, if additional ISH;

Kappa Light Chain (KappaC) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

KappaLambda IHC (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88342

**Keratan Sulfate Quantitative, Urine**

**Specimen Requirements:** Supplies: Plastic, Urine Tubes, 10 mL (T068) Specimen Volume: 1 mL Collection Instructions: 1. Collect a random urine collection (early morning preferred). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Urine Frozen 365 days

**CPT Code Information:** 82542

**Keratin (34BE12) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Keratin (AE1/AE3) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
KRTCA
70494
Keratin (CAM 5.2) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

KRTOS
70495
Keratin (OSCAR) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

KRT19
70490
Keratin 19 (KRT19) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

KRT20
70491
Keratin 20 (KRT20) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
KRT56
70487

Keratin 5/6 (KRT5/6) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

KRT7
70488

Keratin 7 (KRT7) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

KETAX
62730

Ketamine and Metabolite Confirmation, Chain of Custody, Urine

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
Frozen 14 days
Ambient 72 hours

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
CPT Code Information: 80357; G0480 (if appropriate);

KETAU
Ketamine and Metabolite Confirmation, Urine
Specimen Requirements: Supplies: Urine Container, 60 mL (T313) Collection Container/Tube: Plastic, 60-mL urine container (T313) Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days

Frozen 14 days

Ambient 72 hours

CPT Code Information: 80357; G0480 (if appropriate);

FKMS
Ketamine and Metabolite Screen, Serum/Plasma
Specimen Requirements: Submit only 1 of the following specimens: Serum Draw blood in a plain red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 5 mL serum refrigerated in a plastic preservative-free vial. Plasma Draw blood in a lavender-top (EDTA) tube(s) or green-top (heparin) tube(s), (Plasma gel tube is not acceptable.) Spin down and send 5 mL EDTA or heparinized plasma refrigerated in a plastic preservative-free vial.

Specimen Minimum Volume: 2.4 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days

Frozen 270 days

Ambient 14 days

CPT Code Information: 80307 â€“ Screen; 80357 â€“ Confirmation, if appropriate;

FKETO
Ketoconazole, Serum/Plasma
Specimen Requirements: Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). Spin down and send 1 mL of serum refrigerated in plastic vial. Plasma Draw blood in an EDTA lavender-top or pink-top tube(s). Spin down and send 1 mL of EDTA plasma in refrigerated in plastic vial.

Specimen Minimum Volume: 0.22 mL

Transport Temperature:
Varies Refrigerated (preferred) 30 days

Ambient 30 days

Frozen
Ki-67 (MIB-1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

Ki-67(MIB-1), Breast, Quantitative Immunohistochemistry, Automated

Specimen Requirements: Specimen Type: Preferred: Formalin-fixed, paraffin-embedded tissue block containing invasive or metastatic breast carcinoma Acceptable: 2 Unstained sections, containing invasive or metastatic breast carcinoma, on charged slides cut at 4 microns <1 month ago. Tissue on the slides should have been fixed in 10% neutral buffered formalin. Supplies: Pathology Packaging Kit (T554) Collection Instructions: Submit paraffin-embedded invasive or metastatic breast carcinoma tissue. Additional Information: Paraffin block will be returned with the final report.

Transport Temperature:
Special Ambient (preferred)
Refrigerated

Ki-67(MIB-1), Gastrointestinal/Pancreatic Neuroendocrine Tumors, Quantitative Immunohistochemistry, Automated

Specimen Requirements: Supplies: Pathology Packaging Kit (T554) Specimen Type: Preferred: Formalin-fixed, paraffin-embedded tissue block containing neuroendocrine tumor of the pancreas or gastrointestinal (GI) tract including metastases. Acceptable: 2 unstained sections, containing neuroendocrine tumor of the pancreas or GI tract including metastases, on charged slides cut at 4 microns <1 month ago. Tissue on the slides should have been fixed in 10% neutral buffered formalin. Container/Tube: Pathology Packaging Kit (T554) Collection Instructions: Submit formalin-fixed, paraffin-embedded tissue block. Additional Information: Paraffin block will be returned with the final report.

Transport Temperature:
Special Ambient (preferred)
Refrigerated
**CPT Code Information: 88361**

**KINM 71667**

**Ki-67(MIB-1), Gastrointestinal/Pancreatic Neuroendocrine Tumors, Quantitative Immunohistochemistry, Manual**

**Specimen Requirements:** This is not an orderable test. Order PATHC / Pathology Consultation. The consultant will determine the need for special stains. Specimen Type: Preferred: Formalin-fixed, paraffin-embedded tissue block containing neuroendocrine tumor of the pancreas or gastrointestinal (GI) tract including metastases. Acceptable: 2 Unstained sections, containing neuroendocrine tumor of the pancreas or GI tract including metastases, on charged slides cut at 4 microns <1 month ago. Tissue on the slides should have been fixed in 10% neutral buffered formalin. Supplies: Pathology Packaging Kit (T554) Collection Instructions: 1. Submit formalin-fixed, paraffin-embedded tissue block. 2. Attach the green pathology address label included in the kit to the outside of the transport container. Additional Information: Paraffin block will be returned with the final report.

**Transport Temperature:**
Special Ambient  
(preferred)
Refrigerated

**CPT Code Information: 88360**

**KIMEL 70483**

**Ki67 + Melan A Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient  
(preferred)
Refrigerated

**CPT Code Information: 88344-TC**

**KIBM 71668**

**Ki67 Breast IHC Manual**

**Specimen Requirements:** This is not an orderable test. Order PATHC / Pathology Consultation. The consultant will determine the need for special stains. Supplies: Pathology Packaging Kit (T554) Specimen Type: Preferred: Formalin-fixed, paraffin-embedded tissue block containing invasive or metastatic breast carcinoma Acceptable: 2 unstained sections, containing invasive or metastatic breast carcinoma, on charged slides cut at 4 microns <1 month ago. Tissue on the slides should have been fixed in 10% neutral buffered formalin. Container/Tube: Pathology Packaging Kit (T554) Collection Instructions: Submit paraffin-embedded invasive or metastatic breast carcinoma tissue. Additional Information: Paraffin block will be returned with the final report.

**Transport Temperature:**
Special Ambient  
(preferred)
Refrigerated
**Kidney Bean (Red), IgE**

**CPT Code Information:** 88360

**Kidney Bean (Red), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Kidney Stone Analysis**

**CASA**

**8596**

**Kidney Stone Analysis**

**Specimen Requirements:** Supplies: Stone Analysis Collection Kit (T550) Sources: Bladder, kidney, prostatic, renal, or urinary Specimen Volume: Entire dried calculi specimen Collection Instructions: 1. Prepare specimen per Patient Collection Instructions for Kidney Stones in Special Instructions. 2. Do not place stone directly in a bag. If specimen is received in a bag, either transfer stone into a screw-capped, plastic container or place bag containing stone in a screw-capped, plastic container.

**Specimen Minimum Volume:** Entire stone

**Transport Temperature:**
- Stone Ambient (preferred)
- Frozen 365 days
- Refrigerated 365 days

**CPT Code Information:** 82365

**Kingella kingae, Molecular Detection, PCR**

**KKRP**

**65201**

**Kingella kingae, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Kingella kingae DNA is unlikely. Submit only 1 of the following specimens: Specimen Type: Synovial fluid Preferred: Lavender top (EDTA) Acceptable: Pink top (EDTA), royal blue top (EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile container Specimen Volume: 0.5 mL Collection Instructions: Send specimen in original tube (preferred). Specimen Stability Information: Refrigerated (preferred) <7 days /Frozen <7 days Specimen Type: Fresh tissue or biopsy Sources: Bone, joint, synovium, heart valve, aorta, or endocardium Container/Tube: Sterile container Specimen Volume: Entire collection or 5 mm(3)- approximately the size of a pencil eraser Collection Instructions: Collect fresh tissue specimen. Specimen Stability Information: Refrigerated (preferred) <7 days/ Frozen <7 days Supplies: Tissue Block Container (T553) Specimen Type: Formalin-fixed, paraffin-embedded tissue block Sources: Bone, joint, synovium, heart valve, aorta, or endocardium Container/Tube: Sterile container for cut sections or Tissue Block Container (T553) Specimen Volume: Submit formalin-fixed paraffin-embedded tissue block to be cut and returned. Alternately, perform cuts and place two to five
10-micron sections in a sterile container for submission (minimum volume: two 10-micron sections).

Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Fluid: 0.5 mL Tissue: 5 mm(3) or two 10-micron sections

**Transport Temperature:**
- Varies Varies

**CPT Code Information:** 87798

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**KKBRP 65202**

**Kingella kingae, Molecular Detection, PCR, Blood**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Kingella kingae DNA is unlikely. Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798

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**KITB 61744**

**KIT Asp816Val Mutation Analysis, Blood**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD-B (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood.

**Specimen Minimum Volume:** Blood: 1 mL

**Transport Temperature:**
- Whole blood Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81273-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, mastocytosis), gene analysis, D816 variant(s)

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**KITAS 88802**

**KIT Asp816Val Mutation Analysis, Qualitative PCR**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: 1. Label specimen as extracted DNA from blood or bone marrow 2. Indication volume and concentration of DNA Specimen Stability Information: Refrigerated/Ambient

**Specimen Minimum Volume:** Extracted DNA: 50 mcL at 20 ng extracted DNA/mcL

**Transport Temperature:**
- Varies Varies
**KITBM 61745**

**KIT Asp816Val Mutation Analysis, Qualitative PCR, Bone Marrow**

**Specimen Requirements:** Container/Tube: Bone marrow Preferred: EDTA (lavender top) Acceptable: ACD-B (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Bone Marrow: Ambient (preferred) 7 days
- Refrigerated: 7 days

**CPT Code Information:** 81273-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, mastocytosis), gene analysis, D816 variant(s)

**KIT11 35336**

**KIT Exon 11, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population. Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population, slides may be stained and/or scraped. Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies: Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81272; 88381-Microdissection, manual;

**KIT13 35337**

**KIT Exon 13, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped. Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies: Ambient (preferred)
- Frozen
**CPT Code Information:** 81272; 88381-Microdissection, manual;

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**KIT17 35338**

**KIT Exon 17, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81272-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (eg, exons 8, 11, 13, 17, 18); 88381-Microdissection, manual;

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**KIT8 35334**

**KIT Exon 8, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81272-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (eg, exons 8, 11, 13, 17, 18); 88381-Microdissection, manual;

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**KIT9 35335**

**KIT Exon 9, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all
specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped. Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81272-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (eg, exons 8, 11, 13, 17, 18); 88381-Microdissection, manual;

**KIT Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**KIT Mutation Exons 8-11 and 17, Hematologic Neoplasms, Sequencing, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: EDTA (lavender top) or ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability Information: Ambient (preferred)/Refrigerate Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) or ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability Information: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow with an indication of volume and concentration of the DNA. Specimen Stability Information: Frozen (preferred)/Refrigerate/Ambient Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Volume: Entire block Additional Information: Tissue must demonstrate involvement by a hematologic neoplasm (eg, AML), not solid tumors. Specimen Stability Information: Ambient Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Volume: Entire block Specimen Stability Information: Ambient Specimen Type: Tissue Slides: Unstained slides Specimen Volume: 10 Slides Additional Information: Tissue must demonstrate involvement by a hematologic neoplasm (eg, AML), not solid tumors. Specimen Stability Information: Ambient

**Specimen Minimum Volume:** Blood, bone marrow: 1 mL Extracted DNA from blood or bone marrow: 50 microliters (mCL) at 20 ng/mCL
Transport Temperature:
Varies 7 days

CPT Code Information: 81272-KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (eg, gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (eg, exons 8, 11, 13, 17, 18)

Kiwi Fruit, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Known 45,X, Mosaicism Reflex Analysis, FISH

Specimen Requirements: Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Whole blood Ambient (preferred)
Refrigerated

CPT Code Information: 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Known Variant Analysis-1 Variant

Specimen Requirements: Submit only 1 of the following specimen types: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days-Refrigerated 14 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL

**Specimen Minimum Volume:** Whole Blood: 0.6 mL. Amniotic Fluid: 10 mL. Chorionic Villi: 5 mg.

**Transport Temperature:** Varies Varies.

**CPT Code Information:** 81403

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**KVAR2**

**Known Variant Analysis-2 Variants**

**Specimen Requirements:** Submit only 1 of the following specimen types: Specimen Type: Whole blood. Container/Tube: Lavender top (EDTA). Specimen Volume: 3 mL. Collection Instructions: Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days. Specimen Type: DNA. Container/Tube: 2 mL screw top tube. Specimen Volume: 100 mcL (microliters). Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated. Prenatal specimens due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid. Container/Tube: Amniotic fluid container. Specimen Volume: 20 mL. Refrigerated (preferred)/Ambient. Additional Information: A separate culture charge will be assessed under CULAF / Amniotic Fluid Culture for Genetic Testing. Specimen Type: Cultured amniocytes. Container/Tube: T-25 flask. Specimen Volume: 2 Full flasks. Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated.

**Specimen Minimum Volume:** Whole Blood: 0.6 mL. Amniotic Fluid: 10 mL. Chorionic Villi: 5 mg.

**Transport Temperature:** Varies Varies.

**CPT Code Information:** 81403 x 2
**Known Variant Analysis-3+ Variants**

**Specimen Requirements:** Submit only 1 of the following specimen types: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 μL (microliters) Collection Instructions: 1. The preferred volume is 100 μL at a concentration of 250 ng/μL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Additional Information: A separate culture charge will be assessed under CULAF / Amniotic Fluid Culture for Genetic Testing. Specimen Type: Cultured amniocytes Container/Tube: T-25 flask Specimen Volume: 2 Full flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15-mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Additional Information: A separate culture charge will be assessed under CULFB / Fibroblast Culture for Genetic Testing. Specimen Type: Cultured chorionic villi Container/Tube: T-25 flasks Specimen Volume: 2 Full flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Whole Blood: 0.6 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81403 x 3 (up to x 5)

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**KPC (blaKPC) and NDM (blaNDM) in Gram-Negative Bacilli, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Klebsiella pneumoniae (KPC) or New Dehli metallo-beta-lactamase (NDM) DNA is unlikely. Supplies: Infectious Container, Large (T146) Collection Container/Tube: Slant Specimen Volume: Isolate Collection Instructions: 1. Isolate the bacteria. 2. Bacterial organism must be in pure culture, actively growing. Do not submit mixed cultures.

**Transport Temperature:**

Varies Ambient (preferred)

Refrigerated

**CPT Code Information:** 87798 x 2

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**KPC (blaKPC) and NDM (blaNDM) Surveillance, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by KPC or NDM DNA is not likely. Specimen source is required. Submit only 1 of the following specimens: Preferred: Specimen Type: Perianal, perirectal, rectal Collection Container/Tube: Culture transport swab Specimen Volume: Swab Acceptable: Specimen Type: Preserved Stool Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S) Specimen
**KPC and NDM PCR (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798 x 2

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**Krabbe Disease Second-Tier Newborn Screen, Blood Spot**

**Specimen Requirements:**
- Specimen Volume: 3 blood spots
- Collection Instructions: 1. Completely fill at least 3 circles on the filter paper card (approximated 100-microliters blood per circle).
- 2. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours.
- 3. Do not expose specimen to heat or direct sunlight.
- 4. Do not stack wet specimens.
- 5. Keep specimen dry.
- Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.
- 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 2 blood spots

**Transport Temperature:**
- Whole blood Ambient (preferred) 96 days
- Frozen 96 days
- Refrigerated 96 days

**CPT Code Information:** 82542-Psychosine; 81401-30-kb deletion;

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**Krabbe Disease, Full Gene Analysis and Large (30 kb) Deletion, PCR**

**Specimen Requirements:**
- Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant
- Specimen Volume: 3 mL
- Collection Instructions: 1. Invert several times to mix blood.
- 2. Send specimen in original tube.
- Specimen Stability Information: Ambient (preferred)/Refrigerated
- Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask
Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**

Varies

**CPT Code Information:** 81406 GALC (galactosylceramidase) (eg, Krabbe disease), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

**KRAS**

**KRAS Mutation Analysis, 7 Mutation Panel, Colorectal**

**Specimen Requirements:** Pathology report must accompany specimen in order for testing to be performed. Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Container/Tube: Slides Specimen Volume: 1 stained and 5 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 5 unstained, nonbaked slides with 5 micron-thick sections of the tumor tissue.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin-and-eosin and 5 unstained, nonbaked slides (5-microns thick sections) of the tumor tissue.

**Transport Temperature:**

Varies

Ambient (preferred)

Frozen

Refrigerated

**CPT Code Information:** 81275-KRAS (v-Ki-ras2 Kirsten rat sarcoma viral oncogene) (eg, carcinoma) gene analysis, variants in codons 12 and 13 ; ; Additional Test; 88381-Microdissection, manual;

**KRASO**

**KRAS Mutation Analysis, 7 Mutation Panel, Other (Non-Colorectal)**

**Specimen Requirements:** Pathology report must accompany specimen in order for testing to be
performed. Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions:
Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue
Container/Tube: Slides Specimen Volume: 1 stained and 5 unstained Collection Instructions: Submit 1
slide stained with hematoxylin and eosin and 5 unstained, nonbaked slides with 5-micron thick sections of
the tumor tissue.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block
(preferred) or 1 slide stained with hematoxylin and eosin and 5 unstained, nonbaked slides (5-microns
thick sections) of the tumor tissue.

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** 81275-KRAS (v-Ki-ras2 Kirsten rat sarcoma viral oncogene) (eg,
carcinoma) gene analysis, variants in codons 12 and 13 ; ; Additional Test; 88381-Microdissection,
manual;

**LACO 62905**

**Lacosamide, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw
blood immediately before next scheduled dose. 2. For sustained-release formulations ONLY, draw
blood a minimum of 12 hours after last dose. 3. Centrifuge and separate serum from cells or gel within 2
hours of draw.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 80299

**LD_I 8679**

**Lactate Dehydrogenase (LD) Isoenzymes, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen
Volume: 2 mL divided into 2 tubes each containing 1 mL

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
Serum Ambient (preferred) 7 days
Refrigerated 48 hours

**CPT Code Information:** 83615-LD; 83625-LD isoenzymes;
Lactate Dehydrogenase (LD), Body Fluid

**Specimen Requirements:** Collection Container/Tube: Sterile container Submission Container/Tube: Plastic container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid: Ambient (preferred) 7 days
- Refrigerated: 48 hours

**CPT Code Information:** 83615

Lactate Dehydrogenase (LD), Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum: Ambient (preferred) 7 days
- Frozen: 30 days
- Refrigerated: 48 hours

**CPT Code Information:** 83615

Lactate, Body Fluid

**Specimen Requirements:** Specimen Type: Spinal fluid Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge to remove any cellular material. 2. Indicate specimen source. Spinal fluid is the only acceptable source.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid: Frozen (preferred) 30 days
- Refrigerated: 14 days

**CPT Code Information:** 83605

Lactate, Plasma

**Specimen Requirements:** Collection Container/Tube: Grey top (potassium oxalate/sodium fluoride) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Collection must be at least 1 mL in a 2-mL draw tube or at least 2 mL in a 4-mL draw tube. 2. Spin down and separate plasma from cells. Additional Information: Patient's age and sex is required.

**Specimen Minimum Volume:** 0.2 mL
Transport Temperature:
Plasma NaFl-KOx Frozen 30 days

CPT Code Information: 83605

LACS1 601685
Lactate, Plasma
Specimen Requirements: Container/Tube: Grey top (potassium oxalate/sodium fluoride)
Specimen Volume: 0.5 mL Collection Instructions: 1. Collection must be at least 1 mL in a 2-mL draw tube or at least 2 mL in a 4-mL draw tube. 2. Spin down and separate plasma from cells.
Specimen Minimum Volume: 0.25 mL
Transport Temperature:
Plasma NaFl-KOx Refrigerated (preferred) 14 days
Ambient 8 hours

CPT Code Information: 83605

LASF1 601821
Lactic Acid, Spinal Fluid
Specimen Requirements: Specimen Type: Spinal fluid Container/Tube: Sterile container
Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
CSF Frozen (preferred) 60 days
Refrigerated 24 hours
Ambient 3 hours

CPT Code Information: 83605

FLACF 57827
Lactoferrin, Fecal by ELISA
Specimen Requirements: Preferred Specimen Type: Unpreserved stool Supplies: Sterile stool container Container/Tube: Sterile stool container Specimen Volume: 5 g Specimen Stability Information: Refrigerated Collection Instructions: 5 grams fresh, unpreserved stool or stool preserved in Cary-Blair transport media (Agar Swab is not acceptable), shipped refrigerate in a plastic leak-proof container.
Specimen Minimum Volume: 1 gm
Transport Temperature:
Fecal Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 83630
Lactotransferrin IHC, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Ladybeetle Multicolored Asian (Harmonia axyridis) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days
Frozen  365 days
Ambient  28 days

**CPT Code Information:** 86003

Lamb’s Quarter, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:** 86003

Lamb, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Lambda Light Chain (Lambda-C) Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693)
- Preferred: 2 unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Lamellar Body Count, Amniotic Fluid**

**Specimen Requirements:**
- Container/Tube: Amniotic fluid container or plastic vial
- Specimen Volume: 2 mL
- Collection Instructions: 1. Do not centrifuge 2. Amniotic specimens must be blood and meconium free.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Amniotic Fld Refrigerated (preferred) 28 days
- Ambient 7 days

**CPT Code Information:** 83664

**Lamotrigine, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1 mL
- Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. For sustained-release formulations ONLY, draw blood a minimum of 12 hours after last dose. 3. Spin down within 2 hours of draw. 4. Remove serum from serum gel tube if applicable.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days
CPT Code Information: 80175

**LANGR 70496**

**Langerin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**LANG 82349**

**Langust (Lobster), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003

**LATI 70632**

**LAT Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**LATX 82787**

**Latex, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from...
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**NRHDL 29552**

**LDL a-High Density Cholesterol**

**Specimen Requirements:** Only orderable as part of a profile. For more information see LDLD / LDL Cholesterol (Beta-Quantification), Serum.

**Transport Temperature:**
- Serum Refrigerated (preferred)
- Frozen

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**LDLD 89652**

**LDL Cholesterol (Beta-Quantification), Serum**

**Specimen Requirements:** Patient Preparation: Patient must not consume any alcohol for 24 hours before the specimen is drawn. Container/Tube: Preferred: Red top Acceptable: Serum gel

Specimen Volume: 3 mL Additional Information: Indicate patient's age and sex.

**Specimen Minimum Volume:** <2 years: 1 mL; > or =2 years: 2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 10 days
- Frozen

**CPT Code Information:** 83701-Lipoprotein, blood; high resolution fractionation and quantitation of lipoproteins including lipoprotein subclasses when performed (eg, electrophoresis, ultracentrifugation)

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**FLLDLD 75160**

**LDL Cholesterol, Direct**

**Specimen Requirements:** Draw blood in a serum gel tube(s), plain red-top tube is also acceptable. Spin down and send 1 mL of serum refrigerate.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 5 days
- Frozen 30 days

**CPT Code Information:** 83721
Lead Occupational Exposure, Random, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL. Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83655; 82570;

Lead Profile Occupational Exposure, Blood

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Metal Free (Lead only) EDTA Tube, 3 mL (T615) Microtainer (EDTA) Tube, 0.5 mL (T174) If ordering the EDTA trace element Vacutainer tube from BD, order catalog #368381 Container/Tube: Preferred: Royal blue-top BD Vacutainer Plus with EDTA blood collection tube (T183) Acceptable: Tan-top (lead only) BD Vacutainer Plus with EDTA blood collection tube (T615) or BD Microtainer with EDTA (T174) or royal blue-top Monoject trace element blood collection tube Specimen Volume: 2 mL. Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** Whole blood Refrigerated 28 days

**CPT Code Information:** 83655-Lead; 84202-Protoporphyrin, RBC; Quantitative;

Lead, 24 Hour, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL. Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.
**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83655

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**Lead, Capillary, with Demographics, Blood**

**PBDC 113400**

**Specimen Requirements:** Patient Preparation: -High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. -CDC recommends venous collection of samples for lead testing. -Capillary lead testing is acceptable for pediatrics and patients with phlebotomy considerations, but capillary blood collection may be more susceptible to contamination. Elevated capillary blood levels must be confirmed with a venous lead blood test.

**Supplies:** Microtainer (EDTA) Tube, 1.5 mL (T174) Collection Container/Tube: BD Microtainer with EDTA (T174) Specimen Volume: 0.4 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83655

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**Lead, Hair**

**PBHA 8495**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. Additional Information: If known, indicate source of hair (axillary, head, or pubic).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**
- Hair Ambient (preferred)
- Frozen Refrigerated

**CPT Code Information:** 83655

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**Lead, Nails**

**PBNA 89857**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g
Collection Instructions: 1. Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. 2. Clippings should be taken from all 10 fingernails or toenails. Additional Information: If known, indicate source of nails (fingernails or toenails).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**
Nail Ambient  
(preferred)

Frozen  
Refrigerated

**CPT Code Information:** 83655

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**PBDV**

**Lead, Venous, with Demographics, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: -Metal Free B-D Tube (EDTA), 6 mL (T183) -Metal Free (Lead only) EDTA Tube, 3mL (T615) -If ordering the trace element blood collection tube from BD, order catalog #368381 Container/Tube: Preferred: Royal blue-top BD Vacutainer Plus with EDTA blood collection tube (T183) Acceptable: Tan-top (lead only) BD Vacutainer Plus with EDTA blood collection tube (T615) Specimen Volume: 2 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
Whole blood Refrigerated (preferred)  28 days  
Ambient  28 days  
Frozen  28 days

**CPT Code Information:** 83655

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**PBRCR**

**Lead/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Urine Refrigerated (preferred)  28 days  
Ambient  28 days
**PBRC 48548**

**Lead/Creatinine Ratio, Urine**

**Specimen Requirements:** Only orderable as part of a profile. See PBCR / Lead/Creatinine Ratio, Random, Urine or HMCRU / Heavy Metal/Creatinine Ratio, with Reflex, Urine.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred)  28 days
- Ambient  28 days
- Frozen  28 days

**LEFLU 60292**

**Leflunomide Metabolite (Teriflunomide), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw blood no sooner than 12 hours (trough value) after last dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Red  Ambient (preferred)  28 days
- Frozen  28 days
- Refrigerated  28 days

**LAGU 81268**

**Legionella Antigen, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 0.5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. 3. Excessively bloody or very turbid specimens containing protein, cells, or particulates will be cancelled. They can inhibit the function of the test. 4. Centrifuging to remove particulates is not approved. 5. Specimens with any dyes or unnatural color are not acceptable and will be canceled.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred)  7 days
- Frozen  14 days
- Ambient  24 hours

**CPT Code Information:** 83655; 82570; 80299; 87899
Legionella Culture

**Specimen Requirements:** Specimen Type: Bronchial washing, bronchoalveolar lavage, bronchus fluid, chest fluid, chest tube drainage, empyema, endotracheal specimen, fresh lung tissue, heart valves, induced sputum, lingula (lung), lung biopsy, pericardial fluid or tissue, pleura, pleural fluid, protected catheter brush, sputum, thoracentesis fluid, tracheal secretion, transbronchial biopsy, or transtracheal aspirate Container/Tube: Sterile container Specimen Volume: Entire specimen

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:** Varies Refrigerated 48 hours

**CPT Code Information:** 87081-Legionella culture; 87077-Ident by MALDI-TOF mass spec (if appropriate); 87153-Aerobe ident by sequencing (if appropriate); 87176-Tissue processing (if appropriate);

Legionella pneumophila (Legionnaires Disease), Antibody, Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:** Serum Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 86713

Legionella species, Molecular Detection, PCR

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Legionella DNA is unlikely. Specimen Type: Respiratory Sources: Sputum, tracheal secretions/aspirates, transtracheal aspirate, bronchial washing/aspirate, bronchoalveolar lavage, lung fluid or pleural fluid Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Fresh tissue or biopsy Sources: Lung tissue Container/Tube: Sterile container Specimen Volume: Entire collection

**Specimen Minimum Volume:** Fluid: 0.5 mL Tissue: 5 mm(3)

**Transport Temperature:** Varies Refrigerated (preferred) 7 days

Frozen 7 days

**CPT Code Information:** 87801

Leishmaniasis (Visceral) Antibody, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen
Volume: 0.2 mL

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86717

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**FLEMG**

**Lemon IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**LEM**

**Lemon, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FLENG**

**Lentil IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days
**LEN 82885**

**Lentil, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

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**LEPD 82849**

**Lepidoglyphus destructor, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

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**FLEP 91339**

**Leptin**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial. Note: EDTA (lavender-top) plasma is an acceptable alternate.

**Specimen Minimum Volume:** 0.5 mL NOTE: Minimum volume does not allow for repeat analysis.

**Transport Temperature:**
- Serum Frozen (preferred) 200 days
- Ambient 48 hours
- Refrigerated 48 hours

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Leptospira, IgM, Serum

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel  
  Acceptable: Red top  
- **Specimen Volume:** 0.3 mL  
- **Collection Instructions:** Serum should be collected according to standard practices. Acute and convalescent specimens obtained to determine seroconversion should be collected 2 or more weeks apart.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
  - Frozen 30 days

**CPT Code Information:** 86720

Lettuce IgG

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.  
  Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

Lettuce, IgE

**Specimen Requirements:**
- **Container/Tube:** Preferred: Red top  
  Acceptable: Serum gel  
- **Specimen Volume:** 0.5 mL for each 5 allergens requested  
- **Additional Information:** Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

Leukemia and Lymphoma Phenotyping, Technical Only

**Specimen Requirements:**
- Submit only 1 of the following specimens:  
  - **Specimen Type:** Blood  
  - **Container/Tube:** Preferred: Yellow top (ACD solution A or B)  
    Acceptable: Sodium heparin, EDTA  
  - **Specimen Volume:** 10 mL  
  - **Slides:** Include 5 to 10 unstained blood smears, if possible.  
  - **Collection Instructions:** 1. Do not transfer blood to other containers. 2. Label specimen as blood. Specimen Stability Information: Ambient <96 hours/Refrigerated < or =96 hours  
  - **Specimen Type:** Bone marrow  
  - **Container/Tube:** Preferred: Yellow top (ACD solution A or B)  
    Acceptable: Sodium heparin, EDTA
Specimen Volume: 1-5 mL Slides: Include 5 to 10 unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens is not required. 2. Label specimen as bone marrow. Additional Information: If cytogenetic tests are also desired when drawing LCMS / Leukemia/Lymphoma Immunophenotyping by Flow Cytometry, an additional specimen should be submitted. It is important that the specimen be obtained, processed, and transported according to instructions for the other required test. Specimen Stability Information: Ambient <96 hours/Refrigerated < or =96 hours Specimen Type: Fluid Sources: Serous effusions, pleural, pericardial, or abdominal (peritoneal fluid) Container/Tube: Body fluid container Specimen Volume: 20 mL Collection Instructions: 1. If possible, fluids other than spinal fluid should be anticoagulated with heparin (1 U/mL of fluid). 2. The volume of fluid necessary to phenotype the lymphocytes or blasts in serous effusions depends upon the cell count in the specimen. Usually 20 mL of pleural or peritoneal fluid is sufficient. Smaller volumes can be used if there is a high cell count. 3. Label specimen as spinal fluid. Specimen Stability Information: Refrigerated <48 hours/Ambient < or =48 hours Supplies: Hank's Solution (T132) Specimen Volume: 5 mm(3) or larger biopsy Specimen Stability Information: Ambient <96 hours/Refrigerated < or =96 hours Collection Instructions: 1. Send intact specimen (do not mince). 2. Specimen cannot be fixed. 

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow, Spinal Fluid: 1 mL Fluid from Serous Effusions: 5 mL Tissue: 1 mm(3) or larger biopsy

**Transport Temperature:** 
Varies

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); Additional CPTs may be added if consultative help is needed with the case, or algorithm dictates Mayo consultant involvement.; 88187-Flow cytometry interpretation, 2 to 8 markers (if appropriate); 88188-Flow cytometry interpretation, 9 to 15 markers (if appropriate); 88189-Flow cytometry interpretation, 16 or more markers (if appropriate);

**Leukemia/Lymphoma Immunophenotyping by Flow Cytometry**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA Specimen Volume: 6 mL Slides: Include 5 to 10 unstained blood smears, if possible. Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood. Specimen Stability Information: Ambient <96 hours/Refrigerated < or =96 hours Specimen Type: Bone marrow Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: Sodium heparin, EDTA Specimen Volume: 1-5 mL Slides: Include 5 to 10 unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens is not required. 2. Label specimen as bone marrow. Specimen Stability Information: Ambient <96 hours/Refrigerated < or =96 hours Specimen Type: Fluid Sources: Serous effusions, pleural fluid, pericardial fluid, abdominal (peritoneal) fluid Container/Tube: Body fluid container Specimen Volume: 20 mL Collection Instructions: 1. If possible, fluids other than spinal fluid should be anticoagulated with heparin (1 U/mL of fluid). 2. The volume of fluid necessary to phenotype the lymphocytes or blasts in serous effusions depends upon the cell count in the specimen. Usually 20 mL of pleural or peritoneal fluid is sufficient. Smaller volumes can be used if
there is a high cell count. 3. Label specimen with fluid type. Specimen Stability Information: Refrigerated
<72 hours/Ambient < or =72 hours Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen
Volume: 1-1.5 mL Collection Instructions: 1. An original cytopsin preparation (preferably unstained)
must be included with the spinal fluid specimen so correlative morphologic evaluation can occur. 2. The
volume of fluid necessary to phenotype the lymphocytes or blasts in spinal fluid depends upon the cell
count in the specimen. A cell count should be determined and submitted with the specimen. Usually 1 to
1.5 mL of spinal fluid is sufficient. Smaller volumes can be used if there is a high cell count. If cell count
is <10 cells/mL, a larger volume of spinal fluid may be required. When cell counts drop below 5
cells/mL, the immunophenotypic analysis may not be successful. 3. Label specimen as spinal fluid.
Specimen Stability Information: Refrigerated <48 hours/Ambient < or =48 hours

**Specimen Minimum Volume:** Blood: 3 mL Bone Marrow, Spinal Fluid: 1 mL Fluid from
Serous Effusions: 5 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker
x 1; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each) ; 88187-Flow
Cytometry Interpretation, 2 to 8 Markers (if appropriate); 88188-Flow Cytometry Interpretation, 9 to 15
Markers (if appropriate); 88189-Flow Cytometry Interpretation, 16 or More Markers (if appropriate);

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**Leukemia/Lymphoma Immunophenotyping by Flow Cytometry, Tissue**

**Specimen Requirements:** Supplies: Hank's Solution (T132) Container/Tube: Sterile container
with 15 mL of tissue culture medium (eg, Hank's balanced salt solution [T132], RPMI, or equivalent)
Specimen Volume: 5 mm(3) or larger biopsy Collection Instructions: 1. Collect fine-needle aspirate. 2.
Send intact specimen (do not mince). 3. Specimen cannot be fixed.

**Specimen Minimum Volume:** 1 mm(3)

**Transport Temperature:**
Tissue Refrigerated
(preferred)
Ambient

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker
x 1; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each) ; 88187-Flow
Cytometry Interpretation, 2 to 8 Markers (if appropriate); 88188-Flow Cytometry Interpretation, 9 to 15
Markers (if appropriate); 88189-Flow Cytometry Interpretation, 16 or More Markers (if appropriate);

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**Leukocyte Adhesion Deficiency Type 1, CD11a/CD18 and CD11b/CD18 Complex Immunophenotyping, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be
performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 5 mL
Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 72 hours
LECT2 70497  Leukocyte Cell-Derived Chemotaxin 2 (LECT2), Immunostains Without Interpretation

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88184; 88185 x 2;

LTE4 62530  Leukotriene E4, Urine


Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Refrigerated (preferred)  7 days
Frozen  30 days
Ambient  24 hours

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

LEV1P 113309  Level 1 Gross only (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88300

LEV2P 113310  Level 2 Gross and microscopic (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88302

LEV3P 113311  Level 3 Gross and microscopic (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88304

LEV4P 113312  Level 4 Gross and microscopic (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88305

LV4RP 113313  Level 4 Gross and Microscopic, RB (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
Refrigerated

CPT Code Information: 88305

LEV5P 113314  Level 5 Gross and microscopic (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature:
Varies Ambient
(preferred)
**LEV6P 113315**

**Level 6 Gross and microscopic (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88307

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**LEVE 83140**

**Levetiracetam, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. For sustained-release formulations ONLY, draw blood a minimum of 12 hours after last dose. 3. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 88309

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**LIDO 37045**

**Lidocaine, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80177

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**LMO2 70501**

**LIM Domain Only 2 (LMO2) Immunostain, Technical Component**

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**Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**LIME**

82360

**Lime, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**FLALA**

57193

**Limulus Amebocyte Lysate (Endotoxin)**

**Specimen Requirements:** 5 mL aqueous solution used in patient management. Send solution frozen in non-pyrogenic, plastic container. NOTE: 1. Submit name of aqueous solution, and the diluent if applicable. 2. Body fluids are not acceptable. 3. Glass vials are not acceptable.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

Varies Frozen 30 days

**CPT Code Information:** No CPT code available on Non-Biological specimens

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**LIND**

82862

**Linden, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days
LINS 86311
Linseed, IgE
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

CPT Code Information: 86003

LPBF1 48437
Lipase, Body Fluid
**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Frozen (preferred) 30 days
  - Refrigerated 21 days

CPT Code Information: 83690

FLIPR 90347
Lipase, Random Urine
**Specimen Requirements:** 2 mL random urine, no preservatives, in a sterile screw capped container, shipped ambient. Note: 1) Also acceptable, 24 hour or first void clean catch. 2) Indicate on container and request form collection duration.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Ambient (preferred) 7 days
  - Refrigerated 30 days
  - Frozen 4 days

CPT Code Information: 83690

LPS1 48293
Lipase, Serum
**Specimen Requirements:** 2 mL Serum, no preservatives, shipped Ambient or Frozen (preferred) for 90 days.

CPT Code Information: 86003
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tube must be centrifuged within 2 hours of draw time. 2. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 90 days

**CPT Code Information:** 83690

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**Lipid Analysis, Body Fluid**

**Specimen Requirements:** Collection Container/Tube: Sterile container Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Centrifuge, separate supernatant, and send both supernatant and sediment. 2. Label specimens as sediment and supernatant. Additional Information: Indicate specimen source.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Body Fluid Frozen (preferred) 30 days
Refrigerated 7 days
Ambient 24 hours

**CPT Code Information:** 82664-Electrophoretic technique, not elsewhere specified (Chylomicrons and lipoproteins); 84311-Spectrophotometry, analyte not specified (Cholesterol); 84478-Triglycerides;

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**Lipid Panel, Fasting**

**Specimen Requirements:** Patient Preparation: 1. Fasting overnight (12 hours) 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tube must be centrifuged within 2 hours of draw time. 2. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 30 days

**CPT Code Information:** 80061-Lipid panel (if all 3 performed); 82465-Cholesterol, total (if all 3 are not performed); 84478-Triglycerides (if all 3 are not performed); 83718-Cholesterol, HDL (if all 3 are not performed);

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**Lipid Panel, Non-Fasting, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tube must be centrifuged within 2 hours of draw time. 2. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time.

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 657
time. 2. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time.

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 30 days

**CPT Code Information:** 80061-Lipid panel (if all 3 performed); 82465-Cholesterol, total (if all 3 are not performed); 84478-Triglycerides (if all 3 are not performed); 83718-Cholesterol, HDL (if all 3 are not performed);

**LPAWS 89005**

**Lipoprotein (a) Cholesterol, Serum**  
**Specimen Requirements:** Patient Preparation: Fasting (8 hours before collection and abstain from alcohol for 24 hours before collection) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.4 mL  
**Specimen Minimum Volume:** 0.25 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 60 days

**CPT Code Information:** 83700

**LIPA 81558**

**Lipoprotein (a), Serum**  
**Specimen Requirements:** Patient Preparation: Fasting-overnight (12-14 hours) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL  
**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 7 days

**CPT Code Information:** 83695

**LMPP 83673**

**Lipoprotein Metabolism Profile**  
**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours) 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 5 mL  
**Specimen Minimum Volume:** 2 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 60 days
**LITH**

**Lithium, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Draw blood 8 to 12 hours after last dose (trough specimen). 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: Peak serum concentrations do not correlate with symptoms.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80178

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**LFABP**

**Liver Fatty Acid-Binding Protein (L-FABP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**LIVPR**

**Liver Profile, Serum**

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated 7 days

**CPT Code Information:** 80061-Lipid panel (includes: HDL [CPT Code 83718], total cholesterol [CPT Code 82465], and triglycerides [CPT Code 84478]); 82172-Apolipoprotein B; 83700-Lp(a) cholesterol electrophoresis; 80076; 82247; 82248; 84450; 84460; 84075; 82040; 84155;
Liver/Kidney Microsome Type 1 Antibodies, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86376

Lobster, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Locust Black (Robinia pseudoacacia) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

Long QT Syndrome Multi-Gene Panel, Blood

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 0.6 mL
Transport Temperature:
Whole Blood EDTA Ambient  
(preferred)  
Refrigerated

CPT Code Information: 81403; 81404; 81406 x 2; 81407; 81479;

**LORAZ**

**Lorazepam (Ativan), Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma: Specimen Type: Plasma Container/Tube: Green Top Specimen Volume: 2 mL Collection Instructions: Draw blood in a green-top sodium heparin tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL of plasma refrigerated in a plastic vial. Serum: Specimen Type: Serum Container/Tube: Red Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

Frozen 180 days

Ambient 72 hours

**CPT Code Information:** 80346; G0480 (if appropriate); 35304

**FUSF**

**Low-Grade Fibromyxoid Sarcoma (LGFMS), 16p11.2 (FUS or TLS) Rearrangement, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
Tissue Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
Loxapine (Loxitaner) and 8-Hydroxyloxapine

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80342; ;

LSD Trace Analysis, Urine

**Specimen Requirements:** Send 1 mL from a random urine collection. Send specimen refrigerated in a plastic (preservative-free) container. Note: Specimen must be light protected.

**Specimen Minimum Volume:** 0.45 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen

**CPT Code Information:** 80323

Lung Cancer Rearrangement Testing, Tumor

**Specimen Requirements:**
- Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block
- Acceptable Slides: 1 Stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nonbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (direct smears or ThinPrep) Slides: 1-2 Slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:**
- Formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 810 unstained slides (nonbaked, charged slides preferred) with 5- microns -thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides from one tissue block) and at least 20% tumor cells

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated
Lung Cancer, ALK (2p23) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue
Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Slides: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Three consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 – DNA probe, each; each additional probe set (if appropriate); 88271x1 – DNA probe, each; each; coverage for sets containing 3 probes (if appropriate); 88271x2 – DNA probe, each; each; coverage for sets containing 4 probes (if appropriate); 88271x3 – DNA probe, each; each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 – Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
Lung Cancer, RET (10q11) Rearrangement, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue
Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Slides: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Specimen Minimum Volume: Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Transport Temperature:
Tissue Ambient
(preferred)
Refrigerated

CPT Code Information: 88271 x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271 x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271 x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Lung Cancer, ROS1 (6q22) Rearrangement, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue
Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Slides: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Specimen Minimum Volume: Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Transport Temperature:
Tissue Ambient
(preferred)
Refrigerated

CPT Code Information: 88271 x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271 x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271 x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
Lung Cancer-Targeted Gene Panel with Rearrangement, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (non-baked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (direct smears or ThinPrep) Slide: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 8 unstained slides (non-baked, charged slides preferred) with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides from one tissue block) and at least 20% tumor cells

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** 81445-Targeted genomic sequence analysis panel, solid organ neoplasm; Slide Review; 88381-Microdissection, manual;

Lung Cancer-Targeted Gene Panel, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable: Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nonbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (Direct smears or ThinPrep) Slides: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 8 unstained slides (non-baked, charged slides preferred) with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides from one tissue block) and at least 20% tumor cells

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** 81445-Targeted genomic sequence analysis panel, solid organ neoplasm; Slide Review; 88381-Microdissection, manual;

Lupin, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested

Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Lupus Anticoagulant Evaluation with Reflex**

**Specimen Requirements:** 3 mL platelet-poor plasma, shipped frozen. Draw blood into a 3.2% sodium citrate (light blue-top) tube. Centrifuge for 15 minutes at 1500 g within 60 minutes of collection. Using a plastic pipette, remove plasma, taking care to avoid the WBC/platelet buffy layer and place into plastic vial. Centrifuge a second time and transfer platelet-poor plasma into a new plastic vial. Plasma must be free of platelets (<10,000/µL). Freeze immediately.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

- Plasma Na Cit Frozen 90 days

**CPT Code Information:** 85613/ Russell viper venom time (includes venom); diluted; 85730/Thromboplastin time, partial (PTT); plasma; 85598/ Platelet neutralization (Hexagonal Phase Confirm) â€“ (if appropriate); 85597/ Platelet neutralization (dRVVT Confirm) â€“ (if appropriate); 85613/dRVVT 1:1 Dilution (if appropriate); 85670/Thrombin Clotting Time (if appropriate);

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**Lupus Anticoagulant Profile**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient should not be receiving Coumadin or heparin. If so, please note. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 5 mL in 5 plastic vials each containing 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimens immediately at or below -40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial. 4. If multiple coagulation profiles are ordered, each profile must be on a separate order.

**Specimen Minimum Volume:** 4 mL in 4 plastic vials each containing 1 mL

**Transport Temperature:**

- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85610-PT; 85613-DRVVT; 85730-APTT; 85210-Factor II (if appropriate); 85220-Factor V (if appropriate); 85230-Factor VII (if appropriate); 85240-Factor VIII (if appropriate); 85250-Factor IX (if appropriate); 85260-Factor X (if appropriate); 85270-Factor XI (if appropriate); 85280-Factor XII (if appropriate); 85335- Bethesda units (if appropriate); 85335-Factor VIII inhibitor screen (if appropriate); 85366-Soluble fibrin monomer (if appropriate); 85379-D-dimer (if appropriate); 85384-Fibrinogen (if appropriate); 85390-26-Special coagulation interpretation (if appropriate);
85597-Platelet neutralization for lupus inhibitor (if appropriate); 85598-Staclot LA (if appropriate); 85611-PT mix 1:1 (if appropriate); 85613-DRVVT mix (if appropriate); 85613-DRVVT confirmation (if appropriate); 85635-Reptilase time (if appropriate); 85670-Thrombin time (if appropriate); 85732-APTT mix 1:1 (if appropriate);

LUTHI 70498

Luteinizing Hormone (LH) Beta Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

LHPED 62999

Luteinizing Hormone (LH), Pediatrics, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.25 mL Collection Instructions: 1. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection 2. Serum gel tubes should be centrifuged within 2 hours of collection.

**Specimen Minimum Volume:** 0.13 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 83002

LH 602752

Luteinizing Hormone (LH), Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged and aliquoted within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 24 hours

**CPT Code Information:** 83002
**Lyme Central Nervous System Infection IgG with Antibody Index Reflex, Serum and Spinal Fluid**

**Specimen Requirements:** Both spinal fluid (CSF) and serum are required for this test. CSF and serum must be collected within 24 hours maximum of each other. Specimen Type: Spinal Fluid Collection Container/Tube: Sterile vial Specimen Volume: 1.5 mL Collection Instructions: 1. A spinal fluid sample of 1.5 mL needs to be collected within 24 hours of the serum specimen, preferably at the same time. 2. Label vial as spinal fluid or CSF. 3. CSF aliquot should be from the second, third, or fourth CSF vial collected during the lumbar puncture. - Do not submit CSF from the first vial due to the possibility of blood contamination. 4. Band specimens together. Specimen Type: Serum Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.5 mL Collection Instructions: 1. A serum sample of 1.5 mL needs to be collected within 24 hours of the spinal fluid specimen, preferably at the same time. 2. Label as serum. 3. Band specimens together.

**Specimen Minimum Volume:** CSF: 1.2 mL Serum: 1.2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 11 days
  - Frozen 35 days
- Serum Refrigerated (preferred) 11 days
  - Frozen 35 days

**CPT Code Information:** 86618-Lyme spinal fluid; 86618 x 2-Lyme, Serum and spinal fluid if applicable for Antibody Index; 82040-Albumin, serum if applicable for Antibody Index; 82042-Albumin, spinal fluid if applicable for Antibody Index; 82784 x 2-IgG, serum and spinal fluid if applicable for Antibody Index;

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**Lyme CNS Infection IgG, Antibody Index**

**Specimen Requirements:** Only orderable as part of a profile. For more information see LNBAB / Lyme CNS Infection IgG with Antibody Index Reflex.

**Specimen Minimum Volume:** Only orderable as part of a profile. For more information see LNBAB / Lyme CNS Infection IgG with Antibody Index Reflex.

**Transport Temperature:**
- CSF Refrigerated (preferred) 11 days
  - Frozen 35 days

**CPT Code Information:** 86618 x 2; 82040; 82042; 82784 x 2;

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**Lyme Disease Antibody Index**

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 30 days
  - Ambient 7 days
**LYWB 9535**

**Lyme Disease Antibody, Immunoblot, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Specimen Volume: 0.75 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 14 days
  - Frozen: 30 days

**CPT Code Information:** 86617 x 2

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**ELYME 65417**

**Lyme Disease European Antibody Screen, Serum**

**Specimen Requirements:**
- Supplies: Aliquot Tube, 5 mL (T465)
- Collection Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Submission Container/Tube: 5-mL aliquot tube (T465)
- Specimen Volume: 0.5 mL
- Pediatric: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 10 days
  - Frozen: 30 days

**CPT Code Information:** 86618; 86617 x 2 - Lyme Disease European Immunoblot, S (if appropriate);

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**ELYMI 65418**

**Lyme Disease European Immunoblot, Serum**

**Specimen Requirements:** Only orderable as a reflex. For more information see ELYME / Lyme Disease European Antibody Screen, Serum.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 10 days
  - Frozen: 14 days

**CPT Code Information:** 86617 x 2

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**LYME 9129**

**Lyme Disease Serology, Serum**

**Specimen Requirements:**
- Supplies: Aliquot Tube, 5 mL (T465)
- Collection Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Submission Container/Tube: 5-mL aliquot tube (T465)
- Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL
**Lyme Disease, Molecular Detection, PCR, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL Forms: If not ordering electronically, complete, print, and send a Microbiology Test Request Form (T244) with the specimen (http://www.mayomedicallaboratories.com/it-mmfiles/microbiology_test_request_form.pdf).

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:** Whole Blood EDTA Refrigerated (preferred) 7 days

**CPT Code Information:** 86618; 86617 x 2; Lyme disease confirmation (if appropriate);

**Lyme Disease, Molecular Detection, PCR, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: Label specimen as spinal fluid. Specimen Type: Synovial fluid Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: Label specimen as synovial fluid. Specimen Type: Tissue (fresh only) Sources: Skin or synovial biopsy Container/Tube: Sterile container with normal saline Specimen Volume: Approximately 4 mm(3) Collection Instructions: 1. Submit only fresh tissue. 2. Skin biopsies: a. Wash biopsy site with an antiseptic soap. Thoroughly rinse area with sterile water. Do not use alcohol or iodine preparations. A local anesthetic may be used. b. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. 3. Label specimen with source of tissue.

**Specimen Minimum Volume:** Spinal Fluid, Synovial Fluid: 0.3 mL; Tissue: NA

**Transport Temperature:** Varies Refrigerated (preferred) 7 days

**CPT Code Information:** 87476; 87798 x 2;
LPAGF
60592

**Lymphocyte Proliferation to Antigens, Blood**

**Specimen Requirements:** This test should not be ordered for patients younger than 3 months of age unless there is a clinical history of candidiasis. See the Cautions section for additional information. For serial monitoring, we recommend that specimen draws be performed at the same time of day. See Cautions section. Supplies: Ambient Mailer-Critical Specimens Only (T668) Container/Tube: Green top (sodium heparin) Specimen Volume: See Cautions section. <3 months: 1 mL 3-24 months: 3 mL 25 months-18 years: 5 mL >18 years: 20 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Blood Volume Recommendations Based on Absolute Lymphocyte Count (ALC) Antigen Only ALC Blood Volume for Minimum CA and TT Only Blood Volume for Full Assay <0.5 >18.5 cc >40 cc 0.5-1.0 18.5 cc 40 cc 1.1-1.5 8.5 cc 20 cc 1.6-2.0 6.0 cc 12 cc 2.1-3.0 4.5 cc 10 cc 3.1-4.0 3.0 cc 6 cc 4.1-5.0 2.5 cc 5 cc >5.0 2.0 cc 4 cc Mitogen and Antigen ALC Blood Volume for Minimum of Each Assay Blood Volume for Full Assay <0.5 >28 cc >60 cc 0.5-1.0 28 cc 60 cc 1.1-1.5 12 cc 30 cc 1.6-2.0 8.5 cc 20 cc 2.1-3.0 6.5 cc 15 cc 3.1-4.0 4.5 cc 10 cc 4.1-5.0 3.5 cc 8 cc >5.0 2.5 cc 6 cc

**Specimen Minimum Volume:** <6 years: 1 mL; 6-18 years: 2 mL; Adults (>18 years): 6 mL

**Transport Temperature:**
WB Sodium Heparin Ambient 48 hours

**CPT Code Information:** 86353; 86353 (if appropriate);

LPMGF
60591

**Lymphocyte Proliferation to Mitogens, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Supplies: Ambient Mailer-Critical Specimens Only (T668) Container/Tube: Green top (sodium heparin) Specimen Volume: <3 months: 1 mL 3 months-5 years: 2 mL 6-18 years: 3 mL 6-18 years: 10 mL Collection Instructions: Send specimen is original tube. Do not aliquot. Blood Volume Recommendations Based on Absolute Lymphocyte Count (ALC) Mitogen Only ALC Blood Volume for Minimum PHA Only Blood Volume for Minimum PHA and PWM Blood Volume for Full Assay <0.5 >6.5 cc >8.5 cc >22 cc 0.5-1.0 6.5 cc 8.5 cc 22 cc 1.1-1.5 3.0 cc 4.0 cc 10 cc 1.6-2.0 2.0 cc 2.5 cc 7 cc 2.1-3.0 1.5 cc 2.0 cc 6 cc 3.1-4.0 1.0 cc 1.5 cc 4 cc 4.1-5.0 0.8 cc 1.0 cc 3 cc >5.0 0.5 cc 0.8 cc 2 cc Mitogen and Antigen ALC Blood Volume for Minimum of Each Assay Blood Volume for Full Assay <0.5 >28 cc >60 cc 0.5-1.0 28 cc 60 cc 1.1-1.5 12 cc 30 cc 1.6-2.0 8.5 cc 20 cc 2.1-3.0 6.5 cc 15 cc 3.1-4.0 4.5 cc 10 cc 4.1-5.0 3.5 cc 8 cc >5.0 2.5 cc 6 cc

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
WB Sodium Heparin Ambient 48 hours

**CPT Code Information:** 86353; 86353 (if appropriate);
LEF1 71356
Lymphoid Enhancer-Binding Factor 1 (LEF1) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

LPLFX 61114
Lymphoplasmacytic Lymphoma/Waldenstrom Macroglobulinemia (LPL/WM), MYD88 L265P with Reflex to CXCR4

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood Container/Tube: EDTA (lavender top, preferred), ACD solution B (yellow top) Specimen Volume: 3 mL Specimen Stability: Ambient (preferred)/Refrigerated Collection Instructions: 1. Invert several times to mix blood 2. Send specimen in original tube 3. Label specimen as blood Specimen Type: Bone marrow Container/Tube: EDTA (lavender top, preferred), ACD solution B (yellow top) Specimen Volume: 2 mL Specimen Stability: Ambient (preferred)/Refrigerated Collection Instructions: 1. Invert several times to mix bone marrow 2. Send specimen in original tube 3. Label specimen as bone marrow Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire specimen Specimen Stability: Frozen (preferred)/Refrigerated/Ambient Collection Instructions: Label specimen as extracted DNA and list the specimen source. Include indication of volume and concentration of the DNA. Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability: Ambient Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability: Ambient

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL Extracted DNA: 20mcL with a concentration of at least 10 nanograms per mcL

**Transport Temperature:**
Varies

**CPT Code Information:** 81305

LYNCH 64333
Lynch Syndrome Panel

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this assay; see Special Instructions. Submit the required form with the
**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies
  - Ambient (preferred)
  - Frozen
  - Refrigerated

**CPT Code Information:** 81292-MLH1; 81295-MSH2; 81298-MSH6; 81317-PMS2; 81319-PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants; 81403-EPCAM; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**LPCBS 61766**

**Lysophosphatidylcholines by LC MS/MS, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493)
Specimen Volume: 2 blood spots
Collection Instructions: 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for a minimum of 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry.
Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 56 days
  - Frozen 56 days
  - Ambient 7 days

**CPT Code Information:** 82542

**LALB 62954**

**Lysosomal Acid Lipase, Blood**

**Specimen Requirements:** Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) or green top (sodium heparin)
Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 7 days
  - Ambient 7 days

**CPT Code Information:** 82657
**Lysosomal Acid Lipase, Blood Spot**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Collection Container/Tube: Preferred: Blood spot collection card (T493) Acceptable: Ahlstrom 226 Filter Paper, Munktell TFN, and Whatman Protein Saver 903 Paper Specimen Volume: 2 blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is fingerstick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**

Whole blood Refrigerated (preferred) 28 days

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**CPT Code Information:** 82657

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**Lysosomal and Peroxisomal Disorders Newborn Screen, Blood Spot**

**Specimen Requirements:** Patient must be older than 24 hours and less than 1 week of age. Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Card-Blood Spot Collection (Filter Paper) (T493) Acceptable: Ahlstrom 226 filter paper, Munktell filter paper, Whatman Protein Saver 903 Paper, or blood collected in tubes containing ACD, EDTA, or heparin and dried on filter paper Specimen Volume: 2 blood spots Collection Instructions: 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for a minimum of 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**

Whole blood Refrigerated (preferred) 56 days

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**CPT Code Information:** 83789

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**Lysosomal and Peroxisomal Storage Disorders Screen, Blood Spot**

containing ACD, EDTA, or heparin and dried on acceptable filter paper Specimen Volume: 2 blood spots

Collection Instructions: 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**

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**CPT Code Information:** 82542

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**Lysosomal Storage Disease Panel by Next-Generation Sequencing**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Prenatal Specimens Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request; Eagle’s minimum essential medium with 1% penicillin and streptomycin (T115). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection (Filter Paper) (T493) Specimen Volume: 3 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient older than 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3, 3-mm diameter Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
LSD6  
64906

Lysosomal Storage Disorders Newborn Screen, Blood Spot

**Specimen Requirements:** Patient must be older than 24 hours and less than 1 week of age. Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Card-Blood Spot Collection (Filter Paper) (T493) Acceptable: Ahlstrom 226 filter paper, Munktell filter paper, Whatman Protein Saver 903 Paper, or blood collected in tubes containing ACD, EDTA, or heparin and dried on filter paper Specimen Volume: 2 blood spots Collection Instructions: 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for a minimum of 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 1 blood spot

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 60 days
- Frozen 60 days
- Ambient 30 days

**CPT Code Information:** 83789

LYSDU  
64690

Lysosomal Storage Disorders Screen, Urine

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 10 mL Pediatric: 3 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Frozen 45 days

**CPT Code Information:** 82542x2-Ceramide Trihex and Sulfatide, U and Mucopolysaccharides, (MPS), QL, U; 83864-Mucopolysaccharides (MPS), QN, U; 84377-Oligosaccharide Screen, U;
Lysozyme (LYZ) Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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Lysozyme (Muramidase), Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Plasma EDTA Frozen 30 days

**CPT Code Information:** 85549

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Lysozyme Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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Lysozyme, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86008

FLYSO
Lysozyme, Serum

**Specimen Requirements:** Draw blood in a serum gel tube(s). (Plain red-top tube is acceptable). Spin down and send 1 mL serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 90 days

**CPT Code Information:** 85549

MPTS
M-Protein Isotype by Matrix-Assisted Laser Desorption/Ionization-Time of Flight Mass Spectrometry (MALDI-TOF MS), Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see: SPISO / Protein Electrophoresis and Isotype, Serum SMOGA / Monoclonal Gammopathy Screen, Serum MMOGA / Monoclonal Gammopathy Monitor, Serum Patient Preparation: Fasting preferred but not required Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

**CPT Code Information:** 0077U

MACNT
Macadamia Nut, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens â€” Immunoglobulin E (IgE) Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days
MACE

**Mace, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

MACK

**Mackerel, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

FMACR

**Macroamylase**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days

MCRPL

**Macroprolactin, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair,
skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: Spin down and separate serum from clot.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 90 days
  - Ambient 24 hours

**CPT Code Information:** 84146 x 2

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**Magnesium, 24 Hour, Urine**

**Specimen Requirements:** Collection Container/Tube: 24-hour graduated urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic urine container with no metal cap or glued insert Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 72 hours

**CPT Code Information:** 83735

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**Magnesium, Random, Urine**

**Specimen Requirements:** Only orderable as part of a profile. For more information see SSATR / Supersaturation Profile, Pediatric, Random, Urine.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 72 hours

**CPT Code Information:** 83735

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**Magnesium, Random, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 5-mL tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.
**Magnesium, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel  
  Acceptable: Red top  
- Specimen Volume: 0.5 mL  
- Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.  
  2. Serum gel tubes should be centrifuged within 2 hours of collection.  
  3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.  
- Additional Information: If other metal tests are also desired when drawing for a serum magnesium level; the specimen must be drawn in a plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184).

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days  
  - Frozen 365 days

**CPT Code Information:** 83735

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**Mahi Mahi IgE**

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.  
  Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days  
  - Frozen 365 days  
  - Ambient 28 days

**CPT Code Information:** 86003

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**Mail Out Research, Blood**

**Transport Temperature:**
- Varies

**CPT Code Information:**

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**MAL Immunostain, Technical Component Only**
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

LMALP 37115

Malaria PCR with Parasitemia Reflex

Specimen Requirements: Forms: If not ordering electronically, complete, print, and send a Microbiology Request Form (T244) with the specimen (https://www.mayomedicallaboratories.com/it-mmfiles/Microbiology_Test_Request_Form.pdf). Blood and slides are required. Specimen Type: Blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Do not transfer blood to other containers. Send specimen in original tube. Additional Information: 1. This test is not performed on a STAT basis and, therefore, should not be used as a primary screening test for malaria. 2. This test is used primarily for confirmation of a presumptive malaria diagnosis and determination of infecting Plasmodium species particularly when the parasite morphology on traditional blood films is suboptimal. 3. Clients in the Rochester, MN area who are seeking a primary test for malaria and who can deliver the specimen within 4 hours of collection should order the MAL / Malaria/Babesia Smear. 4. Laboratories that are unable to deliver a specimen within 4 hours of collection should perform an initial screen for malaria and other blood parasites in their laboratory prior to sending a specimen to Mayo Medical Laboratories. Specimen Type: Blood films Container/Tube: Clean, grease-free slides in plastic slide container Specimen Volume: 2 thin blood films and 2 thick blood films Collection Instructions: 1. Blood films should be made from fresh blood using fingerstick or drops of blood from needle following venipuncture. However, EDTA anticoagulated blood is also acceptable. 2. Prepare thin blood films as follows: a. Prepare a thin film with a “feathered edge” that is no more than a single cell thick. b. Allow the film to thoroughly air dry and then fix by briefly immersing in either absolute or 95% methyl alcohol. c. Allow to air dry after fixation. 3. Prepare thick blood films as follows: a. Place a large drop of blood (approximately the size of a dime and preferably from a fingerstick) on a slide. b. Using a corner of a second slide, spread the drop in a circular motion while applying firm pressure to literally scratch the blood onto the carrier slide. This technique allows the blood to dry quickly and adhere well to the slide. Use approximately 20 circular sweeps with the second slide. The drop of blood should be about the size of a quarter when finished. c. Do not fix. Air dry thoroughly (approximately 45 minutes) before placing in transport container.

Specimen Minimum Volume: 1 mL/Slides: NA

Transport Temperature:
Varies Refrigerated (preferred) 7 days

CPT Code Information: 87798; 87207 (if applicable);

PARCT 62259

Malaria Percent Parasitemia

Specimen Requirements: Only orderable as a reflex. For more information see LMALP / Malaria PCR with Parasitemia Reflex. Slides for LMALP are used for the PARCT. May be added on to positive LCMAL / Malaria, Molecular Detection, PCR Only by physician request.

Specimen Minimum Volume: Only orderable as a reflex. For more information see LMALP /
Malaria PCT with Parasitemia Reflex

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Ambient 7 days

**CPT Code Information:** 87207

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**LCMAL**

**87860**

**Malaria, Molecular Detection, PCR Only**

**Specimen Requirements:** Both blood and slides are required. Specimen Type: Blood
Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Do not transfer blood to other containers. Send specimen in original tube. Additional Information: 1. This test is not performed on a STAT basis and, therefore, should not be used as a primary screening test for malaria. 2. This test is used primarily for confirmation of a presumptive malaria diagnosis and determination of infecting Plasmodium species—particularly when the parasite morphology on traditional blood films is suboptimal. 3. Clients in the Rochester, MN area who are seeking a primary test for malaria and who can deliver the specimen within 4 hours of collection should order the MAL / Malaria/Babesia Smear. 4. Laboratories that are unable to deliver a specimen within 4 hours of collection should perform an initial screen for malaria and other blood parasites in their laboratory prior to sending a specimen to Mayo Clinic Laboratories. 5. This test does not include blood smear examination/calculation of parasitemia. If calculation of percent parasitemia is also desired for cases that are PCR positive for Plasmodium species, clients should order LMALP / Malaria with Percent Parasitemia Reflex, Molecular Detection, PCR. Specimen Type: Blood films Container/Tube: Clean, grease-free slides in plastic slide container Specimen Volume: 2 thin blood films and 2 thick blood films Collection Instructions: 1. Ideally, blood films should be made directly from uncoagulated blood acquired via fingerstick. However, EDTA anticoagulated blood is also acceptable. 2. Prepare thin blood films as follows: a. Prepare a thin film with a "feathered edge" that is no more than a single cell thick. b. Allow the film to thoroughly air dry and then fix by briefly immersing in either absolute or 95% methyl alcohol. c. Allow to air dry after fixation. 3. Prepare thick blood films as follows: a. Place a large drop of blood (approximately the size of a dime and preferably from a fingerstick) on a slide. b. Using a corner of a second slide, spread the drop in a circular motion while applying firm pressure to literally scratch the blood onto the carrier slide. This technique allows the blood to dry quickly and adhere well to the slide. Use approximately 20 circular sweeps with the second slide. The drop of blood should be about the size of a quarter when finished. c. Do not fix. Air dry thoroughly (approximately 45 minutes) before placing in transport container.

**Specimen Minimum Volume:** Blood: 1 mL/Slides: NA

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Ambient 7 days

**CPT Code Information:** 87798

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**MAAN**

**82396**

**Maleic Anhydride, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**MCMF** 113355  
**Malignant Cells Cyto/Heme (Bill Only)**  
**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.  
**Transport Temperature:**  
Varies Ambient  
(preferred)  
Refrigerated  

**CPT Code Information:** 86003

**MALT** 82834  
**Malt, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
Frozen 90 days  

**CPT Code Information:** 86003

**MAMLF** 58105  
**MAML2 (11q21) Rearrangement, Mucoepidermoid Carcinoma (MEC), FISH, Tissue**  
**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Container/Tube: Formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Collection Instructions: Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Specimen Volume: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.  
**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.  
**Transport Temperature:**  
Tissue Ambient  
(preferred)  
Refrigerated  

**CPT Code Information:** 88271x2, 88291 DNA probe, each (first probe set), Interpretation and...
Mammaglobin (MGB) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Mandarin, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Manganese, 24 Hour, Urine

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections. 3. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.4 mL
**Manganese, Blood**

**Specimen Requirements:** Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 0.8 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Whole blood Refrigerated (preferred) 28 days

Ambient 28 days

Frozen 28 days

**CPT Code Information:** 83785

**Manganese, Red Blood Cell**

**Specimen Requirements:** Collect whole blood in a metal-free EDTA (royal blue top) tube. Spin down and separate plasma and red blood cells immediately. Ship 3 mL plasma and 3 mL RBC in metal free tubes; refrigerate. NOTE: Both plasma and RBCs are required for testing.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Metal Free EDTA Plasma Refrigerated (preferred) 5 days

Ambient 72 hours

RBCS Refrigerated (preferred) 5 days

Ambient 72 hours

**CPT Code Information:** 83785

**Manganese, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium, iodine, and barium are known to interfere with most metals tests. If gadolinium-, iodine, or barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (No Additive), 6 mL (T184) Metal Free Specimen Vial (T173) Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission
Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.6 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes, and then centrifuge to separate serum from the cellular fraction. Serum must be removed from cellular fraction within 4 hours of draw. Avoid hemolysis. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, while avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83785

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**Manganese/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 7 days

**CPT Code Information:** 83785 Manganese Concentration; 82570 Creatinine Concentration;

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**Mango, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
Mannan Binding Lectin (MBL)

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 365 days
  - Ambient 28 days
  - Refrigerated 28 days

**CPT Code Information:** 86160

Mannose-Binding Lectin, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Frozen 7 days

**CPT Code Information:** 83520

Maple Red (Acer rubrum) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

MAPT Gene, Sequence Analysis, 7 Exon Screening Panel

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

MARE

**Mare's Milk, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

MFRGP

**Marfan Syndrome and Related Disorders Multi-Gene Panel, Varies**

**Specimen Requirements:** Prior Authorization is available for this test. Submit the required form with the specimen. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies

**CPT Code Information:** 81410

MARJ

**Marjoram, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Mass Gen DNA Diag Lab

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering
  1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies

Mass Spectrometry (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies Ambient (preferred) Refrigerated

CPT Code Information: 82542-Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

MatePair, Targeted Rearrangements, Congenital

Specimen Requirements: This test requires 2 blood specimens: 1 sodium heparin and 1 EDTA. Specimen Type: Whole blood Collection Container/Tube: Green top (sodium heparin) and lavender top (EDTA) Specimen Volume: 3 mL EDTA tube and 4 mL sodium heparin tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimens in original tubes.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Whole blood Ambient (preferred) Refrigerated

CPT Code Information: 0012U

MatePair, Targeted Rearrangements, Hematologic
Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimens in original tubes. Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimens in original tubes.

Specimen Minimum Volume: Blood: 2 mL; Bone Marrow: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 0014U

MatePair, Targeted Rearrangements, Oncology

Specimen Requirements: Submit only 1 of the following specimens: Supplies: Hank's Solution (T132) Specimen Type: Tumor biopsy Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 0.5-3 cm(3) or larger Supplies: Hank's Solution (T132) Specimen Type: Lymph node Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 1 cm(3) Supplies: Hank's Solution (T132) Specimen Type: Skin biopsy Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 4-mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Specimen Type: Snap Frozen tissue Container/Tube: Polycon flat Specimen Volume: 3 cm(3)/Lymph Node: 1 cm(3)/Skin Biopsy: 4 mm diameter Specimen Volume: 5 million cells Specimen Type: Cultured tumor cells Container/Tube: T-25 flask filled with transport media Specimen Volume: T-25 flask Specimen Type: Cryo-frozen cultured tumor cells Container/Tube: Polycon flat Specimen Volume: 3 cm(3)/Lymph Node: 1 cm(3)/Skin Biopsy: 4-mm diameter

Specimen Minimum Volume: Tumor Biopsy: 3 cm(3); Lymph Node: 1 cm(3); Skin Biopsy: 4-mm diameter; Cultured tumor cells: T-25 flask; Cryo-frozen cultured tumor cells: 5 million cells

Transport Temperature:
Tissue Varies

CPT Code Information: 0013U

Maternal Cell Contamination, Molecular Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Maternal blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Prenatal Specimens: Submit only 1 of the following specimens: Specimen Type: Cord blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection
Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Additional Information: A separate culture charge will be assessed under CULAF / Amniotic Fluid Culture for Genetic Testing. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Cultured amniocytes Container/Tube: T-25 flask Specimen Volume: 2 full flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Additional Information: A separate culture charge will be assessed under CULFB / Fibroblast Culture for Genetic Testing. Specimen Stability Information: Refrigerated Specimen Type: Cultured chorionic villi Container/Tube: T-25 flasks Specimen Volume: 2 full flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Amniotic Fluid: 10 mL Blood, Cord Blood: 0.5 mL Chorionic Villus: 5 mg

**Transport Temperature:** Varies Varies

**CPT Code Information:** 81265; Fibroblast Culture for Genetic Test; 88233-(if appropriate); 88240-(if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-(if appropriate); 88240-(if appropriate); Each additional specimen; 81266;

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**FMSS1 75347**

**Maternal Serum Screening, Integrated, Specimen #1, PAPP-A, NT**

**Specimen Requirements:** Specimen #1 collection must occur between 10 weeks, 0 days and 13 weeks, 6 days gestation. (If gestational age is based on Crown-Rump length (CRL), the specimen must be collected when the CRL is between 32.4 - 83.9 mm) Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 0.5 mL serum refrigerated in a plastic vial. Separate from cells ASAP or within 2 hours of collection. Note: Submit with order: Patient's date of birth, current weight, number of fetuses present, patient's race, if the patient was diabetic at the time of conception, if there is a known family history of neural tube defects, if the patient has had a previous pregnancy with a trisomy, if the patient is currently smoking, if the patient is taking valproic acid or carbamazepine (Tegretol), if this is a repeat sample, and the age of the egg donor if in vitro fertilization. -Please refer to Arup Website for patient information form at: http://ltd.aruplab.com/Tests/Pub/3000147

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days
- Ambient 72 hours

**CPT Code Information:** 84163

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**FMSS2 75351**

**Maternal Serum Screening, Integrated, Specimen #2, Alpha Fetoprotein, Hcg, Estriol, and Inhibin A**

**Specimen Requirements:** Specimen must be drawn between 14 weeks, 0 days and 24 weeks, 6 days gestation (based on the CRL). Recommended time for maternal serum screening is 16 to 18 weeks gestation. Acceptable date ranges to draw the second samples will be provided in the Integrated-1 report.
Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial. Separate from cells ASAP or within 2 hours of collection. This test requires that a previous first trimester specimen, Maternal Serum Screening, Integrated, Specimen #1, PAPP-A, NT (ARUP test code 3000147), has been performed.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 365 days
  - Ambient 72 hours

**CPT Code Information:** 81511

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**MSMRT**

**Mayo Algorithmic Approach for Stratification of Myeloma and Risk-Adapted Therapy Report**

**Specimen Requirements:** Specimen Type: Redirected bone marrow Preferred: Yellow top (ACD) Acceptable: EDTA or heparin Specimen Volume: 4 mL

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Bone Marrow Ambient (preferred) 72 hours
  - Refrigerated 72 hours

**CPT Code Information:** 88182-Flow cytometry, cell cycle or DNA analysis; 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 5-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); 88187-Flow cytometry interpretation, 2 to 8 Markers;

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**MDM2F**

**MDM2 (12q15) Amplification, Well-Differentiated Liposarcoma/Atypical Lipomatous Tumor, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5- micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25
cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each
probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set
(if appropriate);

**MEAD 82890**  
**Meadow Fescue, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**MFOX 82914**  
**Meadow Foxtail, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**ROPG 34941**  
**Measles (Rubeola) Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen
Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86765

**ROM 80979**  
**Measles (Rubeola) Antibodies, IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen
Volume: 0.5 mL
**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86765

**ROGM** 62066

**Measles (Rubeola) Virus Antibody, IgM and IgG (Separate Determinations), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86765-Rubeola IgM; 86765-Rubeola IgG;

**FMECM** 57760

**Meconium Methadone Screen**

**Specimen Requirements:** Collect specimen into the same leak proof, sterile plastic collection vial until 3 g of meconium have been collected or until the first milk stool appears. Between collections, store specimen in a secure refrigerator. When at least 3 g of meconium has been collected, tightly screw on the cap of the collection vial and send specimen refrigerated. Note: Specimens from different voiding may be pooled if necessary.

**Specimen Minimum Volume:** 0.7 g

**Transport Temperature:**
- Meconium Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 5 days

**CPT Code Information:** 80307

**MECPZ** 35484

**MECP2 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
MCADZ 35478 Medium-Chain Acyl-CoA Dehydrogenase (MCAD) Deficiency Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (e.g., minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Refrigerated (preferred)/Ambient Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

Transport Temperature: Varies

CPT Code Information: 81479-Unlisted molecular pathology procedure; 81302-MECP2 (methyl CpG binding protein 2) (eg, Rett syndrome) gene analysis; full sequence analysis; 81304-MECP2 (methyl CpG binding protein 2) (eg, Rett syndrome) gene analysis; duplication/deletion variants;

MEDF 58122 Medulloblastoma, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Six consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.
Specimen Minimum Volume: Four consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

Transport Temperature:
- Tissue: Ambient (preferred)
- Refrigerated

CPT Code Information: 88271x2, 88291 DNA probe, each (first probe set), Interpretation and report; 88271x2 DNA probe, each; each additional probe set (if appropriate); 88271x1 DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 DNA probe, each; Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 DNA probe, each; Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

MEFVZ 35486

MEFV Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: 1 mL

Transport Temperature:
- Varies Ambient (preferred)
- Refrigerated

CPT Code Information: 81404-MEFV (Mediterranean fever) (eg, familial Mediterranean fever), full gene sequence

MEGR 82347

Megrim, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003
**Melaleuca leucadendron, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Melan A (MART-1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Melanoma Targeted Gene Panel by Next-Generation Sequencing, Tumor**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Slides: 1 Stained and 10 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides with 5 micron-thick sections of the tumor tissue. Specimen Type: Cytology Container/Tube: Cytology slide (direct smears or ThinPrep) Slides: 1 to 2 slides (stained and coverslipped) with a minimum of 5,000 total nucleated cells Collection Instructions: Submit 1 to 2 slides stained and coverslipped Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 8 unstained, non-baked slides with 5-microns-thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides) and 20% tumor nuclei, 1 stained and coverslipped cytology slide with at least 5,000 total nucleated cells and at least 20% tumor cells.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated
Melanoma, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue
Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Seven consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin (H and E) stained slide.

**Specimen Minimum Volume:** Three consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 (H&E) stained slide

**Transport Temperature:**
- Tissue: Ambient (preferred)
- Refrigerated

**CPT Code Information:**
- 81445
- 88381-Microdissection, manual;
- 35286-Melanoma, FISH, Tissue

Melatonin, Plasma

**Specimen Requirements:** Specimen Type: Plasma Container/Tube: Preferred: (Lavender top) EDTA Acceptable: (pink top) EDTA Specimen volume: 3 mL Collection instructions: Draw blood in EDTA (lavender top) tube(s). Spin down and send 1 mL of plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma EDTA: Refrigerated (preferred) 30 days
- Frozen: 365 days
- Ambient: 14 days

**CPT Code Information:** 80375

Melons IgG

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

**CPT Code Information:** 86001

### Melons, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

### Meningitis/Encephalitis Pathogen Panel, PCR, Spinal Fluid

**Specimen Requirements:** Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** CSF Refrigerated 7 days

**CPT Code Information:** 87483

### Meperidine (Demerol) and Normeperidine, serum

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s). Plasma gel tube is not acceptable. Spin down and send 3 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s). Serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:** Varies Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80362
Mephedrone, MDPV and Methylone, Urine

**Specimen Requirements:** Container: Preservative-free plastic urine container Specimen volume: 10 mL Collection instructions collect a random urine specimen No preservative

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80307 â€“ single drug; 80371 â€“ (if appropriate);

Mephobarbital and Phenobarbital, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
  - Ambient 14 days
  - Frozen 14 days

**CPT Code Information:** 80345; G0480 (if appropriate);

Mercaptopurine (6-MP, Purinethol)

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80375

Mercury Occupational Exposure, Random, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert
Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 3 mL. Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 7 days
- Frozen: 7 days

**CPT Code Information:** 83825; 82570;

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**HGU 8592**

**Mercury, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068). Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert. Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert. Specimen Volume: 10 mL. Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 7 days
- Frozen: 7 days

**CPT Code Information:** 83825

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**HG 8618**

**Mercury, Blood**

**Specimen Requirements:** Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183). Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 83825

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**Mercury, Hair**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. Additional Information: If known, indicate source of hair (axillary, head, or pubic).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**

- Hair Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 83825

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**Mercury, Nails**

**Specimen Requirements:** Supplies: Hair and Nails Collection Kit (T565) Specimen Volume: 0.2 g Collection Instructions: 1. Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing in Special Instructions. 2. Clippings should be taken from all 10 fingernails or toenails. Additional Information: If known, indicate source of nails (fingernails or toenails).

**Specimen Minimum Volume:** 0.05 g

**Transport Temperature:**

- Nail Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 83825

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**Mercury/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect urine a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

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**hgrc 48546**

Mercury/Creatinine Ratio, Random, Urine

**Specimen Requirements:** Only orderable as part of profile. See HGCR / Mercury/Creatinine Ratio, Random, Urine or HMCRU / Heavy Metal/Creatinine Ratio, with Reflex, Urine.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 83825 ; 82570 ;

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**merkc 71538**

Merkel CC (MCPyV) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**hey1 35940**

Mesenchymal Chondrosarcoma, by Reverse Transcriptase PCR (RT-PCR)

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 10% tumor cell population Collection Instructions: Process all fresh or frozen specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 10% tumor population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-HEY1/NCOA2 ; 88381-Microdissection, manual;

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**mesor 80460**

Mesoridazine (Serentil)

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com Page 704
**Specimen Requirements:** Submit only 1 of the following: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80342

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**Mesothelial Cell (HBME-1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** N/A

**Transport Temperature:**
- TECHONLY Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Mesquite, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

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**MET (7q31), FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE)
tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**G095 Metabolic Myopathy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81401; 81403; 81404; 81405 x 4; 81406 x 5; 81407; 81479;

**MSNP Metabolic/Syndromic Neuropathy Panel by Next-Generation Sequencing (NGS)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81448

**METAFL Metanephrines, Fractionated, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: Tricyclic antidepressants, labetalol, and sotalol
medications may elevate levels of metanephrines producing results that cannot be interpreted. If clinically feasible, it is optimal to discontinue these medications at least 1 week before collection. For advice on assessing the risk of removing patients from these medications and alternatives, you may consider consultation with a specialist in endocrinology or hypertension. Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 10 g (pediatric: 3 g) of boric acid or 25 mL (pediatric: 15 mL) of 50% acetic acid as preservative at start of collection. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 83835

<table>
<thead>
<tr>
<th>PMET</th>
<th>81609</th>
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<tbody>
<tr>
<td><strong>Metanephrines, Fractionated, Free, Plasma</strong></td>
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<tr>
<td><strong>Specimen Requirements:</strong> Patient Preparation: Use of an Epi-pen within last 7 days may produce inaccurate results. Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down within 2 hours of draw. Plasma must be separated from red blood cells within 2 hours of collection.</td>
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<tr>
<td><strong>Specimen Minimum Volume:</strong> 0.3 mL</td>
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<td><strong>Transport Temperature:</strong></td>
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<tr>
<td>Plasma EDTA Frozen (preferred) 14 days</td>
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<tr>
<td>Refrigerated 7 days</td>
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**CPT Code Information:** 83835

<table>
<thead>
<tr>
<th>METAR</th>
<th>83005</th>
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<tbody>
<tr>
<td><strong>Metanephrines, Fractionated, Random, Urine</strong></td>
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<tr>
<td><strong>Specimen Requirements:</strong> Supplies: Urine Tubes, 10 mL (T068) Patient Preparation: Tricyclic antidepressants and labetalol and sotalol (beta blockers) may elevate levels of metanephrines. If clinically feasible, these medications should be discontinued at least 1 week before collection. Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.</td>
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<tr>
<td><strong>Specimen Minimum Volume:</strong> 3 mL</td>
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<td><strong>Transport Temperature:</strong></td>
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<td>Urine Frozen (preferred) 14 days</td>
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<td>Ambient 7 days</td>
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<tr>
<td>Refrigerated 7 days</td>
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</table>

**CPT Code Information:** 83835
Metformin, Serum/Plasma

**Specimen Requirements:** Submit only one of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in a plastic vial (preservative free). Plasma Draw blood in a lavender-top (EDTA) tube(s) or Pink top tube. (Plasma gel tube is not acceptable.) Spin down and send 1 mL of plasma refrigerate in a plastic vial (preservative free).

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Refrigerated (preferred) 30 days
- Frozen 365 days
- Ambient 30 days

**CPT Code Information:** 80375

Methadone and Metabolites, Serum

**Specimen Requirements:** Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Spin down and remove serum from red blood cells within 2 hours of draw. 2. Aliquot serum to submission container.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80358; G0480 (if appropriate);

Methadone Confirmation, Chain of Custody, Urine

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 14 days

**CPT Code Information:** 80358; G0480 (if appropriate);
Methadone Confirmation, Urine

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order MTDNX / Methadone Confirmation, Chain of Custody, Urine. 2. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 3. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 4. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 14 days

**CPT Code Information:** 80358; G0480 (if appropriate);

Methaqualone Confirmation, urine

**Specimen Requirements:** 20 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 10 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80375

Methemoglobin and Sulfhemoglobin, Blood

**Specimen Requirements:** Specimen must arrive within 72 hours of draw. Container/Tube: Lavender top (EDTA) Specimen Volume: Full tube Additional Information: Patient's age is required.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated 72 hours

**CPT Code Information:** 83050-Methemoglobin; 83060-Sulfhemoglobin;

Methemoglobin Reductase, Blood

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD) Acceptable: Lavender top (EDTA) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers. Additional Information: Patient's age is required.
Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood ACD-B Refrigerated 22 days

CPT Code Information: 82657

**MEVP**

84159

Methemoglobinemia Evaluation

**Specimen Requirements:** Both ACD-B and EDTA blood are required. Container/Tube: Lavender top (EDTA) and yellow top (ACD [Solution B]) Specimen Volume: EDTA: Two 4-mL tubes ACD: One 6-mL tube Collection Instructions: Send specimens in original tube. Do not aliquot.

**Specimen Minimum Volume:** EDTA Blood: 3 mL; ACD Blood: 2.7 mL

**Transport Temperature:**
Whole Blood ACD-B Refrigerated 72 hours
Whole Blood EDTA Refrigerated 72 hours

**CPT Code Information:** Methemoglobinemia Evaluation; 82657-Methemoglobin reductase; 83020-Hemoglobin electrophoresis; 83021-Hemoglobin A2 and F; 83050-Methemoglobin, quantitative; 83060-Sulphhemoglobin, quantitative; ; IEF Confirms; 82664-Isoelectric focusing (if appropriate); ; Hemoglobin, Unstable, Blood; 83068 (if appropriate); ; Hemoglobin Variant by Mass Spectrometry (MS), Blood; 83789 (if appropriate); ; Hemoglobin F, Red Cell Distribution, Blood; 88184 (if appropriate); ;

**MTXSG**

62580

Methotrexate Post Glucarpidase, Serum

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 14 days
Ambient 7 days

**CPT Code Information:** 80299

**MTHX**

37047

Methotrexate, Serum

**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 28 days
Ambient 72 hours

**CPT Code Information:** 80299

**FMETX**

**Methsuximide (Celontin) as Desmethytmethsuximide**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80339

**MMAAF**

**Methylmalonic Acid (MMA), Amniotic Fluid**

**Specimen Requirements:** Container/Tube: Amniotic fluid container Specimen Volume: 5-10 mL Collection Instructions: 1. Obtain specimen during 16 to 19 weeks of gestation. 2. Draw 25 to 30 mL of amniotic fluid and spin down. 3. Send cell-free supernatant specimen.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Amniotic Fld Frozen (preferred) 45 days
Refrigerated 45 days
Ambient 72 hours

**CPT Code Information:** 83921

**MMAP**

**Methylmalonic Acid (MMA), Quantitative, Plasma**

**Specimen Requirements:** Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Refrigerated (preferred) 48 days
Ambient 48 days
Frozen 48 days
Methylmalonic Acid (MMA), Quantitative, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 48 days
- Ambient 48 days
- Frozen 48 days

CPT Code Information: 83921

Methylmalonic Acid (MMA), Quantitative, Urine

**Specimen Requirements:** Patient Preparation: Overnight fast required Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 4 mL Collection Instructions: Collect second-voided specimen after an overnight fast.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Urine Frozen (preferred) 28 days
- Refrigerated 28 days
- Ambient 21 days

CPT Code Information: 83921

Methylmalonic Aciduria and Homocystinuria, cblC Type, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot...
Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

Transport Temperature:

Varies

CPT Code Information: 81404-MMACHC (methylmalonic aciduria [cobalamin deficiency] cblC type, with homocystinuria) (eg, methylmalonic acidemia and homocystinuria), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

Methylmalonic Aciduria and Homocystinuria, cblD Type, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

Transport Temperature:

Varies

CPT Code Information: 81479-Unlisted molecular pathology procedure; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);
Methylphenidate (Ritalin) & MTB, Urine

**Specimen Requirements:** Collection Container: Random urine container Specimen Volume: 10 mL Collection Instructions: Collect 10mL random urine without preservative. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** .3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80360

Methylphenidate, Serum

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and freeze immediately. Send 2 mL of sodium heparin plasma frozen in a plastic vial on dry ice. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and freeze immediately. Send 2 mL serum frozen in a plastic vial on dry ice.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Frozen 180 days
- Serum Red Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80360; ;

Mexiletine, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 3 mL Collection Instructions: 1. Samples should only be collected after patient has been receiving mexiletine for at least 3 days. 2. Trough concentrations should be collected just before administration of next dose.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80299

MGMT Promoter Methylation, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. At least 40% tumor is required for this assay. In general, a 6 mm x 3 mm area of tissue cut at 5-micron thickness is the minimum amount of tissue needed; this could be collected over multiple slides. Acceptable: Specimen Type: Tissue
sections Slides: 1 stained and 5 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 5 unstained, nonbaked 5-micron thick sections of the tumor. At least 40% tumor is required for this assay. In general, a 6 mm x 3 mm area of tissue cut at 5 micron thickness is the minimum amount of tissue needed; this could be collected over multiple slides.

**Specimen Minimum Volume:** 5 unstained slides at 5-microns thickness

**Transport Temperature:**
- Varies
  - Ambient (preferred)
  - Frozen
  - Refrigerated

**CPT Code Information:** 81287; Slide Review; 88381;

### FMI2

**57186**

**MI-2**

**Specimen Requirements:** Submit only 1 of the following Serum Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerate in plastic vial. Plasma Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 1 mL of EDTA plasma refrigerate in plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies
  - Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 7 days

**CPT Code Information:** 83516

### RMA

**81260**

**Microalbumin, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL aliquot tube Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 82043

### MA24

**9386**

**Microalbuminuria, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL aliquot tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of
Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Refrigerated (preferred) 7 days
Ambient 7 days
Frozen 7 days

CPT Code Information: 82043

MLCPC 113370  
Microdissection, Laser Capture (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

Transport Temperature:
Varies
Ambient (preferred)
Refrigerated

CPT Code Information: 88380-Microdissection; laser capture

MPSF 82515  
Micropolyspora faeni, IgG Antibodies, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86609

MSI 35514  
Microsatellite Instability (MSI), Tumor
Specimen Requirements: Tumor and normal tissue samples are both required. If sending multiple blocks, identify individual blocks as normal and/or tumor. Paraffin-embedded tissue blocks that have been decalcified are generally unsuccessful and not validated for testing. If a decalcified specimen is submitted (regardless of decal solution), testing will be canceled. Specimen Type: Tumor tissue block, formalin-fixed, paraffin-embedded (FFPE) prepared cell block unstained slides Specimen Volume: Approximately 1 cm² (2) of tumor is required. This can be 1 cm² (2) in aggregate (eg, 5 unstained slides each containing with 0.2 cm² (2) of tumor and normal tissue). Collection Instructions: Submit formalin-fixed, paraffin-embedded tissue block with corresponding hematoxylin and eosin (H and E) slides (preferred) or 1 slide stained with H and E and 10 unstained, nonbaked slides (5-micrometer thick sections) of the tumor tissue. Specimen Type: Normal tissue block or slide Specimen Volume: Approximately 1 cm² (2) of normal tissue is required. This can be 1 cm² (2) in aggregate (eg, 5 unstained slides each with 0.2 cm² (2) of normal tissue) Collection Instructions: Submit formalin-fixed, paraffin-embedded tissue block with
corresponding hematoxylin and eosin (H and E) slides (preferred) or 1 slide stained with H and E and 10 unstained, nonbaked slides (5-micrometer thick sections) of the normal tissue. Additional Information: 1. Normal tissue does not have to be from the same specimen or tissue source as the tumor specimen submitted for testing. Any normal tissue block, with the exception of tissues composed primarily of adipose tissue, may be submitted. Specimens composed primarily of adipose tissue would not yield a sufficient amount of DNA and if submitted, testing will be canceled. 2. If normal tissue in a formalin-fixed, paraffin-embedded tissue block is not available, whole blood may be submitted instead (see below). A separate FFPE-tumor block is still required for testing if sending in a whole blood specimen for normal. Specimen Type: Normal whole blood (if normal tissue block is not available)

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81301-Microsatellite instability analysis (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) of markers for mismatch repair deficiency (eg, BAT25, BAT26), includes comparison of neoplastic and normal tissue, if performed; 88381-Microdissection, manual;

Microsatellite Instability (MSI)/Mismatch Repair (MMR) Protein Immunohistochemistry Profile

Specimen Requirements: Both tumor and normal tissue are required. If normal tissue in a formalin-fixed, paraffin-embedded tissue block is not available, whole blood may be submitted. Specimen Type: Tissue block and slides Specimen Volume: Approximately 1 cm(2) of tumor and normal tissue are required. This can be 1 cm(2) in aggregate (eg, 5 unstained slides each with 0.2 cm[2] of tumor and normal tissue). Collection Instructions: 1. Submit formalin-fixed, paraffin-embedded tissue block with corresponding hematoxylin and eosin (H and E)-stained slides (preferred) or 1 slide stained with H and E and 10 unstained, nonbaked slides (5-micrometer thick sections) of the tumor/normal tissue. 2. If sending in multiple blocks, identify individual blocks as containing normal or tumor tissue. 3. Paraffin-embedded tissue blocks that have been decalcified are generally unsuccessful and not validated for testing. If a decalcified specimen is submitted, testing will be canceled. Specimen Stability Information: Ambient (preferred)/Frozen/Refrigerated Specimen Type: Whole blood Container/Tube: lavender-top (EDTA) or yellow-top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81301-Microsatellite instability analysis (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) of markers for mismatch repair deficiency (eg, BAT25, BAT26), includes comparison of neoplastic and normal tissue, if performed; MLH-1, Immunostain; 88341 (if appropriate); MSH-2, Immunostain; 88341 (if appropriate); MSH-6, Immunostain; 88341 (if appropriate); PMS-2, Immunostain; 88342 (if appropriate); 88381-Microdissection, manual;
## Microsporidia species, Molecular Detection, PCR

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Unpreserved stool Supplies: Stool container, Small (Random), 4 oz (T288); Stool Collection Kit, Random (T635) Container/Tube: Stool container (T288) Specimen Volume: 5 g Specimen Stability Information: Refrigerated 7 days (preferred)/Frozen 7 days Specimen Type: Preserved stool Supplies: ECOFIX Stool Transport Vial (Kit) (T219); Stool Collection Kit, Random (T635) Container/Tube: Preferred: ECOFIX preservative (T219) Specimen Volume: 5 g Specimen Stability Information: Ambient 7 days (preferred)/Refrigerated 7 days/Frozen 7 days Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 5 mL Collection Instructions: Mid-stream, clean-catch, suprapubic aspirates and catheterization collections are acceptable. Please submit in a clean, sterile container free from preservatives. The first portion of the voided urine (first void) is also acceptable. Specimen Stability Information: Refrigerated 7 days (preferred)/Frozen 7 days

**Specimen Minimum Volume:** Stool: 1 g; Urine: 0.5 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 87798

## Microsporidia Stain

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Duodenal aspirate (small intestinal aspirate, jejunal aspirate, small bowel aspirate) Container/Tube: Sterile container Specimen Volume: 0.5 mL Additional Information: Ecosix and 10% formalin are acceptable preservatives. Specimen Stability Information: Preserved Ambient (preferred) <10 days/Refrigerated <3 days/Frozen Specimen Type: Respiratory secretions (bronchoalveolar lavage [BAL], sputum, bronchial wash, pleural fluid) Container/Tube: Sterile container Specimen Volume: 0.5 mL Specimen Stability Information: Refrigerated <3 days (preferred)/Frozen <10 days Specimen Type: Eye (vitreous fluid, corneal swab or scraping, ocular fluid) Container/Tube: Sterile container or swab Specimen Volume: 0.5 mL Specimen Stability: Refrigerated <3 days Specimen Type: Fresh tissue (lung, eye, bladder, rectal, intestinal, colon, skin, muscle, kidney) Container/Tube: Sterile container Specimen Volume: 3-mm biopsy in 0.1-mL sterile saline Specimen Stability: Refrigerated <3 days Specimen Type: Gallbladder aspirate Container/Tube: Sterile container Specimen Volume: 0.5 mL Specimen Stability: Refrigerated <3 days/Frozen <10 days

**Specimen Minimum Volume:** Duodenal aspirate, gallbladder aspirate, respiratory secretions, eye fluid: 0.5 mL

**Transport Temperature:** Varies

**CPT Code Information:** 87015-Concentration; 87207-Stain;

## Midazolam (Versed), serum

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** Plasma: 2 mL Serum: 2 mL

**Transport Temperature:** Varies

**CPT Code Information:** 90112-Midazolam (Versed), serum; 90113-Midazolam (Versed), whole blood
**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80346; G0480 (if appropriate);

**Milk Cow IgG4**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**Milk, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Milk, Processed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**FMINT**

57885 Mint (Mentha Piperita) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

<table>
<thead>
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<th>Duration</th>
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</thead>
<tbody>
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<tr>
<td>Ambient</td>
<td>28 days</td>
</tr>
</tbody>
</table>

CPT Code Information: 86003

**FMIRT**

57749 Mirtazapine (Remeron)

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
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<td>180 days</td>
</tr>
<tr>
<td>Ambient</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

CPT Code Information: 80335

**ZW69**

90508 Misc Viracor Eurofins Clinical Diag

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies Varies

CPT Code Information: Varies
**Misc Alfred I duPont Hospital for Children**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

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**Misc All Childrens Hospital - Florida**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

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**Misc Arkansas Children's Hospital Testing**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

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**Misc Baylor Cytogenetics Laboratory**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen
requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW201**

**Misc Baylor John Welsh Cardiovascular Diag Lab**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW153**

**Misc Center for Human Genetics**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW204**

**Misc Cincinnati Childrens Hospital Medical Center**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.
Transport Temperature:
Varies Varies

CPT Code Information: Varies

### Misc Esoterix Endocrinology

#### Specimen Requirements:
Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:
1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

#### Specimen Minimum Volume:
Varies

#### Transport Temperature:
Varies Varies

CPT Code Information: Varies

### Misc Johns Hopkins-DACI Ref Lab

#### Specimen Requirements:
Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:
1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

#### Specimen Minimum Volume:
Varies

#### Transport Temperature:
Varies Varies

CPT Code Information: Varies

### Misc Johns Hopkins-DNA Analysis Lab

#### Specimen Requirements:
Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:
1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

#### Specimen Minimum Volume:
Varies

#### Transport Temperature:
**Misc Johns Hopkins-Molecular Microbiology**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:**

Varies

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**Misc Medical Neurogenetics, LLC**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:**

Varies

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**Misc Monogram Biosciences, Inc.**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:**

Varies
Misc National Genetics Inst Testing

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

Misc National Jewish Health Mycobacteriology Test

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

Misc Ohio State Univ Ref Lab Test

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

Misc Prometheus Laboratories Test

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific
requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW206**

**Misc Seattle Children's Hospital Laboratories**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW169**

**Misc Univ of PA School of Medicine**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW119**

**Misc University of Florida Testing**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com  
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form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

Varies

**CPT Code Information:** Varies

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**ZW213**

**Misc University of Michigan (MLabs)**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW305**

**Misc Washington University Neuromuscular Clinical Lab**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MCL Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW190**

**Miscellaneous Alfred I duPont Gastroenterology**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required
consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
Varies

CPT Code Information: Varies

**ZW185**

**Miscellaneous Ambry Genetics**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**ZW242**

**Miscellaneous ARUP Testing**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**ZW294**

**Miscellaneous Asuragen Clinical Services**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies
**CPT Code Information:** Varies

### ZW127

**90566**

**Miscellaneous Athena Testing**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**  
Varies  Varies

**CPT Code Information:** Varies

### ZW53

**90492**

**Miscellaneous Baylor Institute of Metabolic Disease**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**  
Varies  Varies

**CPT Code Information:** Varies

### ZW221

**57103**

**Miscellaneous Baylor Medical Genetics Laboratories**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**  
Varies  Varies

**CPT Code Information:** Varies
**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:** Varies

**CPT Code Information:** Varies
Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

**ZW172**

**Miscellaneous Center for Genetic Testing at St. Francis**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

**ZW10**

**Miscellaneous Chemistry Testing**

**Specimen Requirements:** Varies

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** 84999 (See CPT Coding in Special Instructions)

**ZW139**

**Miscellaneous Child Hosp-Philadelphia**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies
CPT Code Information: Varies

**ZW140**

**Miscellaneous Child Med Ctr Dallas**

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies

**ZW163**

**Miscellaneous Children's Hospital of Philadelphia (CHOP)**

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies

**ZW299**

**Miscellaneous Childrens Hospital Los Angeles**

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 732
Miscellaneous Childrens Hospital of Colorado Testing

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies

CPT Code Information: Varies

Miscellaneous Chlamydia trachomatis and Neisseria gonorrhoeae by Nucleic Acid Amplification

Specimen Requirements: Swab specimens must be collected using an Aptima Collection Unisex Swab (T583), or Aptima Collection Multitest Swab (T584). These swabs are contained in the Aptima Collection Kit. Submit only 1 of the following specimens: Supplies: Swab, Aptima Male/Female Collection (T583) Swab, Aptima Multitest Swab Specimen Collection Kit (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit) Specimen Type: Oral/throat or ocular (corneal/conjunctiva) or rectal/anal Container/Tube: Aptima Collection Multitest Swab (T584) or Aptima Swab Collection System (T583) Specimen Volume: Swab Collection Instructions: 1. Swab site using Aptima Collection Multitest Swab (T584) or Aptima Collection Unisex Swab (T583). Note: The white swab provided within the collection kit is a cleaning swab and should not be used for collection. Discard the white cleaning swab. 2. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport swab container to laboratory and store (refrigerated is preferred) within 60 days of collection. Supplies: Aptima Thin Prep Transport Tube (T652) Specimen Type: Peritoneal fluid (pelvic wash, cul-de-sac fluid) Container/Tube: Aptima Specimen Transfer Tube (T652) Specimen Volume: 1 mL Collection Instructions: 1. Transfer specimen into the Aptima Specimen Transfer Tube (T652) within 24 hours of collection. 2. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 3. Transport Aptima Specimen Transfer Tube to laboratory (refrigerated is preferred) within 30 days of collection.

Specimen Minimum Volume: Oral/Throat, Ocular, Rectal/Anal: Entire Collection Peritoneal Fluid: 1 mL

Transport Temperature:
Varies Refrigerated (preferred)
Ambient
Frozen

CPT Code Information: MCRNA-87491; MGRNA-87591;
**Miscellaneous CHMC - Setchell**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering  
1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**  
Varies Varies

**CPT Code Information:** Varies

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**Miscellaneous Cincinnati Children's Hospital Medical Center-Hematology/Oncology**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering  
1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**  
Varies Varies

**CPT Code Information:** Varies

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**Miscellaneous Cincinnati Children's Nephrology**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering  
1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**  
Varies Varies

**CPT Code Information:** Varies

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**Miscellaneous City of Hope Testing**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or
the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

ZW193

**Miscellaneous Connective Tissue Gene Tests Lab (CTGT)**

**Specimen Requirements:** Varies
This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

ZW212

**Miscellaneous Correlagen Diagnostics**

**Specimen Requirements:** Varies
This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

ZW130

**Miscellaneous DIANON Systems**

**Specimen Requirements:** Varies
This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.
Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies

CPT Code Information: Varies

**ZW58**
**90497**

**Miscellaneous Duke University**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies

CPT Code Information: Varies

**ZW116**
**90555**

**Miscellaneous EGL Genetic Diagnostics Laboratory**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies

CPT Code Information: Varies

**ZW57**
**90496**

**Miscellaneous Esoterix Coagulation**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW63
90502

Miscellaneous Esoterix Genetic Laboratories, LLC - MA Testing

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW189
91561

Miscellaneous Esoterix Genetic Laboratories, LLC - NY Testing

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW225
57161

Miscellaneous Exagen Diagnostics

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
CPT Code Information: Varies

**ZW168**

**91296**

**Miscellaneous GeneDx, Inc. Testing**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the Referral Catalog (CRM). If unable to find the correct test, request forms, or specimen requirements, call 800-533-1710. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Call 800-533-1710 for required forms 4. Specimen type

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

CPT Code Information: Varies

**ZW208**

**91853**

**Miscellaneous Genetic Assays Inc.**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

CPT Code Information: Varies

**ZW182**

**91278**

**Miscellaneous Genova Diagnostics**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

CPT Code Information: Varies
Miscellaneous Greenwood Genetic Ctr

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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Miscellaneous Harvard Medical School

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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Miscellaneous IMMCO Diagnostics

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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Miscellaneous Immunoassay Testing

**Specimen Requirements:** Call 800-533-1710 or 507-266-5700 for specific collection and shipping information.
Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies
CPT Code Information: Varies

**Miscellaneous IMUGEN Inc Testing**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies
CPT Code Information: Varies

**Miscellaneous INFORM DIAGNOSTICS, INC**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature: Varies Varies
CPT Code Information: Varies

**Miscellaneous Inter Science Institute**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies
Transport Temperature:
CPT Code Information: Varies

**Miscellaneous IntrinsicDx**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  **NOTE:** Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

CPT Code Information: Varies

**Miscellaneous Joli Diagnsotics, Inc.**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  **NOTE:** Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

CPT Code Information: Varies

**Miscellaneous Karius Laboratory**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  **NOTE:** Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
CPT Code Information: Varies

**ZW175 91323**

**Miscellaneous Kennedy Krieger Institute**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:** Varies Varies

CPT Code Information: Varies

**ZW74 90513**

**Miscellaneous Kennedy Krieger Institute-Peroxisomal Diseases Laboratory**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:** Varies Varies

CPT Code Information: Varies

**ZW241 57268**

**Miscellaneous Knight Diagnostic Laboratories**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
ЗВ76 90515

**Miscellaneous LabCorp of America**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

ЗВ113 90552

**Miscellaneous LabCorp-RTP, NC**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

ЗВ266 58067

**Miscellaneous Machaon Diagnostics**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering:

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies
**ZW207**

**Miscellaneous MD Anderson Cancer Center**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW79**

**Miscellaneous Med Coll of WI**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW78**

**Miscellaneous Medical Coll of WI**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW80**

**Miscellaneous Medtox Laboratories, Inc.**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral
Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

**ZW111**

**Miscellaneous MiraVista Diagnostics**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

**ZW1**

**Miscellaneous MML Referral Test 1**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

**ZW2**

**Miscellaneous MML Referral Test 2**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.
**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies  Varies

**CPT Code Information:** Varies

**Miscellaneous MML Referral Test 3**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies  Varies

**Miscellaneous National B Virus Resource Laboratory**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies  Varies

**Miscellaneous National Jewish Health**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies  Varies
CPT Code Information: Varies

ZW86 90525

Miscellaneous NMS Testing

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:

Varies Varies

CPT Code Information: Varies

ZW211 91858

Miscellaneous Ohio State Univ Molecular Pathology

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:

Varies Varies

CPT Code Information: Varies

ZW289 75207

Miscellaneous OneOme, LLC

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering

1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies
Miscellaneous Oregon Health and Science University Ocular Immunology Laboratory

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
Varies

CPT Code Information: Varies

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Miscellaneous Pacific Rim Pathology Medical Corp

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies

CPT Code Information: Varies

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Miscellaneous Palo Alto Testing

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies

CPT Code Information: Varies

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Miscellaneous PerkinElmer Genetics, Inc.
Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering
1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
Varies  Varies

CPT Code Information: Varies

ZW194 91602
Miscellaneous Prevention Genetics Lab

ZW83 90522
Miscellaneous Quest Diagnostics Infectious Disease, Inc.

ZW96 90535
Miscellaneous Quest Diagnostics Valencia

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information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW51 90490**

**Miscellaneous Quest Testing**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW131 90570**

**Miscellaneous Quest/Nichols Testing**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

**ZW164 91292**

**Miscellaneous RDL Reference Laboratory, Inc.**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
**ZW91**

**Miscellaneous RFFIT Testing**

**Specimen Requirements:** Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**MISCF**

**Miscellaneous Studies Using Chromosome-Specific Probes, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20-25 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. Additional Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 6. Results will be reported and also telephoned or faxed, if requested. Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer the chorionic villi to a Petri dish containing transport medium. 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Type: Lymph node Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 1 cm(3) Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Specimen Type: Tissue block or slide Preferred: Formalin-fixed, paraffin-embedded tumor tissue block and 1 hematoxylin and eosin (H and E)-stained slide. Acceptable: Four consecutive, unstained, 5-micron thick sections placed on positively charged slides and 1 H and E-stained slide. Specimen Type: Tumor Container/Tube: Sterile container with sterile Hank's balanced salt solution (T132), Ringer's solution, or normal saline. Specimen Volume: 0.5-3 cm(3) or larger

**Specimen Minimum Volume:** Amniotic Fluid: 5 mL/Blood: 2 mL/Bone Marrow: 1

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mL/Chorionic Villi: 5 mg/Lymph Node: 0.5 cm(3)/Solid Tumor: 0.5 cm(3)

**Transport Temperature:**
- Varies: Ambient (preferred)
- Refrigerated

**CPT Code Information:**
- 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 – DNA probe, each; each additional probe set (if appropriate); 88271x1 – DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 – DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 – DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88273 w/modifier 52 – Chromosomal in situ hybridization, less than 10 cells (if appropriate); 88273-Chromosomal in situ hybridization, 10-30 cells (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 – Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**Miscellaneous Transgenomic**

**Specimen Requirements:**
- Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.

**NOTE:** Provide when ordering
1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**
- Varies

**CPT Code Information:**
- Varies

**Miscellaneous U of TX San Ant Test**

**Specimen Requirements:**
- Varies

This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.

**NOTE:** Provide when ordering
1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:**
- Varies

**Transport Temperature:**
- Varies

**CPT Code Information:**
- Varies

**Miscellaneous UCSF Medical Center**

**Specimen Requirements:**
- Varies

This is a Miscellaneous Referral Test. For specific
specimen requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW288
75170

Miscellaneous UF Health Medical Lab-Shands Hospital

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW292
75215

Miscellaneous UNC Center for AIDS Research Clinical Pharmacology & Analytical Chemistry Laboratory

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:
Varies Varies

CPT Code Information: Varies

ZW99
90538

Miscellaneous Univ of AL Testing

Specimen Requirements: Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external)

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or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW210**  
**91857**

**Miscellaneous Univ of IA Molecular Otolaryngology**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

---

**ZW128**  
**90567**

**Miscellaneous University Hospital Clinical Lab Test**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

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**ZW234**  
**57175**

**Miscellaneous University of Alabama at Birmingham**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name  
2. Performing lab code  
3. Specimen Type  
4. Required consent and/or requisitions forms.
form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

**CPT Code Information:** Varies

---

ZW186

**Miscellaneous University of Chicago Genetics Services**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the Referral Catalog (CRM). If unable to find the correct test, request forms, or specimen requirements, call 800-533-1710. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Call 800-533-1710 for required forms
4. Specimen type

**Transport Temperature:**

Varies

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ZW187

**Miscellaneous University of Iowa Diagnostic Labs**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Transport Temperature:**

Varies

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ZW61

**Miscellaneous University of Minnesota Outreach Laboratory**

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering

1. Test name
2. Performing lab code
3. Specimen Type
4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**

Varies

**CPT Code Information:** Varies
Miscellaneous University of Southern California Endocrine Laboratories

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature: Varies Varies

CPT Code Information: Varies

Miscellaneous University of Texas Health Center at Tyler Microbiology

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature: Varies Varies

CPT Code Information: Varies

Miscellaneous University of Utah Genome Center

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700.  NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Transport Temperature: Varies Varies

CPT Code Information: Varies

Miscellaneous University of Virginia Health System

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or
the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies
Varies

**CPT Code Information:** Varies

**SW282**

**Miscellaneous University of Washington Medical Center (UW Virology Dept of Lab Medicine)**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies
Varies

**CPT Code Information:** Varies

**SW278**

**Miscellaneous University of Washington Medical Center-Clinical Immunology Lab**

**Specimen Requirements:** Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering
1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies
Varies

**CPT Code Information:** Varies

**ZW293**

**Miscellaneous UPMC Molecular and Genomic Pathology**
Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies

ZW112 90551  Miscellaneous Yale Univ Testing

Specimen Requirements: Varies  This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name  2. Performing lab code  3. Specimen Type  4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

Specimen Minimum Volume: Varies

Transport Temperature:

Varies Varies

CPT Code Information: Varies

IHC 35466  Mismatch Repair (MMR) Protein Immunohistochemistry Only, Tumor

Specimen Requirements: Tumor tissue is required. Specimen Type: Tissue block and slide Collection Instructions: 1. Submit formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides (5-micron thick sections) of the tumor tissue. 2. Sections should contain tumor tissue.

Transport Temperature:

Varies Ambient (preferred)  Frozen  Refrigerated

CPT Code Information: MLH-1, Immunostain; 88341 (if appropriate);  MSH-2, Immunostain; 88341 (if appropriate);  MSH-6, Immunostain; 88341 (if appropriate);  PMS-2, Immunostain; 88342 (if appropriate);
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

Mitochondrial Antibodies (M2), Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 83516

Mitochondrial Full Genome Analysis by Next-Generation Sequencing (NGS)

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Supplies: Fibroblast Biopsy Transport Media (T115) Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Supplies: Muscle Biopsy Kit (T541) Specimen Type: Muscle Tissue biopsy Collection Instructions: Prepare and transport specimen per instructions in Muscle Biopsy Specimen Preparation Sheet in Special Instructions. Specimen Volume: 10-80mg Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated Specimen Type: Snap Frozen Nerve Tissue Biopsy Collection Instructions: Prepare snap frozen tissue biopsy per surgical procedure Specimen Volume: 0.25-0.5 cm Specimen Stability Information: Frozen Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Specimen Type: Blood spot Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Supplemental Newborn Screening Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient older than 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient
Specimen Minimum Volume: Blood: 1 mL Muscle tissue biopsy: 20 mg Nerve tissue biopsy: See Specimen Required. Blood Spots: 5 punches-3 mm diameter

Transport Temperature: Varies Varies

CPT Code Information: 81460

MITON
64979

Mitochondrial Nuclear Gene Panel by Next-Generation Sequencing (NGS)

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Tissue biopsy Supplies: Muscle Biopsy Kit (T541) Collection Instructions: Prepare and transport specimen per instructions in Muscle Biopsy Specimen Preparation Sheet in Special Instructions. Additional Information: Muscle Biopsy Shipping Kits (T541) are available. Specimen Volume: 10-80 mg Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

Specimen Minimum Volume: Blood: 1 mL Tissue Biopsy: 200 mg

Transport Temperature: Varies Varies

CPT Code Information: 81440

FETCE
91844

Mitochondrial Respiratory Chain Enzyme Analysis (ETC) - Skin Fibroblasts

Specimen Requirements: Cultured Fibroblasts 3 T-25 flasks(s) filled to neck with culture media. Maintain sterility and forward promptly at ambient temperature. Complete and submit with specimen: 1. Baylor Mitochondrial request form.

Transport Temperature: Fibroblasts Ambient

CPT Code Information: 84311 x 6; 82657 x 6; 88233; 88240;
**Mitotane (Lysodren)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80375

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**MLH1**

**MLH-1, Immunostain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

**CPT Code Information:** 88341

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**MLH1Z**

**MLH1 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL

Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81292-MLHI1 (mutL homolog 1, colon cancer, nonpolyposis type 2) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);
MLH1 Hypermethylation Analysis (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 81288-MLH1 promoter methylation analysis;

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MLH1 Hypermethylation Analysis, Blood

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies

- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81288

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MLH1 Hypermethylation Analysis, Tumor

**Specimen Requirements:** This test is only performed on colon or endometrial tumors with confirmed loss of MLH1 protein expression. Extracted DNA from tissues is NOT an acceptable specimen type. Pathology report must accompany specimen in order for testing to be performed. Specimen Type: Tissue block or slide Collection Instructions: 1. Submit formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides (5-micron thick sections) of the tumor tissue. 2. Sections should contain tumor tissue.

**Transport Temperature:**

Varies

- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81288; 88381;

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MLH1 Hypermethylation and BRAF Mutation Analysis, Tumor

**Specimen Requirements:** This test is only performed on colon tumors with confirmed loss of MLH1 protein expression. Extracted DNA from tissues is NOT an acceptable specimen type. Pathology report must accompany specimen in order for testing to be performed. Specimen Type: Tissue block or slide Collection Instructions: 1. Submit formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides (5 micron-thick sections) of
the tumor tissue. 2. Sections should contain both tumor and normal tissue.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** Slide Review; 88381-Microdissection, manual; 81210-BRAF (v-raf murine sarcoma viral oncogene homolog B1) (eg, colon cancer), gene analysis, V600E variant, if appropriate; 81288-MLH1 promoter methylation analysis, if appropriate;

<table>
<thead>
<tr>
<th>MLH1 70510</th>
<th>MLH1 Immunostain, Technical Component Only</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specimen Requirements:</strong> Specimen Type: Tissue Supplies: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block</td>
<td></td>
</tr>
<tr>
<td><strong>Transport Temperature:</strong> TECHONLY Ambient (preferred) Refrigerated</td>
<td></td>
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<tr>
<td><strong>CPT Code Information:</strong> 88342-TC, primary; 88341-TC, if additional IHC;</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MLH3Z 35496</th>
<th>MLH3 Gene, Full Gene Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specimen Requirements:</strong> Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.</td>
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<tr>
<td><strong>Specimen Minimum Volume:</strong> 1 mL</td>
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<tr>
<td><strong>Transport Temperature:</strong> Varies Ambient (preferred) Frozen Refrigerated</td>
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<tr>
<td><strong>CPT Code Information:</strong> 81479-Unlisted molecular pathology code ; ; Additional Tests; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MLYCZ 35481</th>
<th>MLYCD Gene, Full Gene Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specimen Requirements:</strong> Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who</td>
<td></td>
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</table>
have received a bone marrow transplant. Submit only 1 of the following specimens:

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Container/Tube</th>
<th>Specimen Volume</th>
<th>Collection Instructions</th>
<th>Specimen Stability Information</th>
<th>CPT Code Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood</td>
<td>Preferred: Lavender top (EDTA) or yellow top (ACD)</td>
<td>3 mL</td>
<td>1. Invert several times to mix blood. 2. Send specimen in original tube.</td>
<td>Ambient (preferred)/Refrigerated &lt;24 hours</td>
<td>81479 - Unlisted molecular pathology procedure; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);</td>
</tr>
<tr>
<td>Cultured fibroblasts</td>
<td>T-75 or T-25 flask</td>
<td></td>
<td>Specimen Stability Information: Ambient (preferred)/Refrigerated &lt;24 hours</td>
<td></td>
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</tr>
<tr>
<td>Skin biopsy</td>
<td>Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]).</td>
<td>Specimen Stability Information: Ambient (preferred)/Refrigerated &lt;24 hours</td>
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<td>Specimen Minimum Volume: 1 mL</td>
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<td>Transport Temperature:</td>
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<td>Varies</td>
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<tr>
<td>MMRV Immune Status Profile, Serum</td>
<td>Container/Tube: Preferred: Serum gel Acceptable: Red top</td>
<td>Volume: 1 mL</td>
<td>Specimen Volume: 1 mL</td>
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<td>Transport Temperature:</td>
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<td></td>
<td>Serum Refrigerated (preferred) 14 days</td>
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<td>Frozen 14 days</td>
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<tr>
<td>MOC-31 Immunostain, Technical Component Only</td>
<td>Supplies: Immunostain Technical Only Envelope (T693)</td>
<td>Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)</td>
<td>Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block</td>
<td>TECHONLY Ambient (preferred) Refrigerated</td>
<td>88342-TC, primary; 88341-TC, if additional IHC;</td>
</tr>
<tr>
<td>Mold Panel</td>
<td>Container/Tube: Preferred: Red top Acceptable: Serum gel</td>
<td>Specimen Type:</td>
<td>Specimen Stability Information:</td>
<td></td>
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</tbody>
</table>

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 764
Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**MINT**

**61696**

**Molecular Interpretation**

**Specimen Requirements:**

**Transport Temperature:**

Whole blood Refrigerated 30 days

**CPT Code Information:**

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**MOWB**

**64272**

**Molybdenum, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Collection Container/Tube: Preferred: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 0.8 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83018

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**MOLPS**

**89270**

**Molybdenum, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (No Additive), 6 mL (T184) Metal Free Specimen Vial (T173) Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.6 mL Collection Instructions: 1. Allow specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for
complete instructions.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 83018

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**Monoamine Neurotransmitter Metabolites/Amines**

**Specimen Requirements:** REQUIRED: 1. Baylor collection kit (MML Supply T612) required. Each collection kit contains 5 microcentrifuge tubes in a cardboard holder. Tube #3 contains antioxidants necessary to protect the same integrity. One set of tubes is required per patient. Baylor request form and collection protocol. Collection date Date of birth Current medications and relevant history COLLECTION PROTOCOL 1) CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes. Tube 1: 0.5 mL Tube 2: 0.5 mL Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity) Tube 4: 1.0 mL Tube 5: 0.5 mL - If samples not blood contaminated should be placed on dry ice at bedside - If samples are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen. -Store samples at -80 until they can be shipped. 2) Complete Baylor Neuropharmacology request form. Include test required, sample date, date of birth, current medications and relevant history. 3) Label tubes with patient name and ID number, leaving the tube number viewable. 4) Place samples inside a specimen transport bag and the Baylor request forms inside the pouch of the transport bag. 5) Ship samples frozen on dry ice.

**Transport Temperature:**
- CSF Frozen

**CPT Code Information:** 82542

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**Monoclonal Gammopathy Monitoring, Serum**

**Specimen Requirements:** Patient Preparation: Fasting (12 hour) preferred but not required

- Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 84155; 84165; 0077U (if appropriate); 86334 (if appropriate);

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**Monoclonal Gammopathy Screen, Serum**

**Specimen Requirements:** Patient Preparation: Fasting (12 hour) preferred but not required

- Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Minimum Volume:** 2 mL

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**Monoclonal Protein Study, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Submission Container/Tube: Plastic, 60-mL urine bottle and plastic, 5-mL tube (T465) Specimen Volume: 50 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Aliquot specimen between containers. 3. Label specimens appropriately (60-mL bottle for protein electrophoresis and immunofixation and 5-mL tube for protein, total). Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 5 days
- Ambient 72 hours

**CPT Code Information:** 84156-Protein, total; 84166-Electrophoresis, protein; 86335-Immunofixation;

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**Monoclonal Protein Study, Expanded Panel, Serum**

**Specimen Requirements:** Patient Preparation: Fasting preferred but not required Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 83883 x 2-Nephelometry, each analyte not elsewhere specified; 84155-Protein, total; 84165-Protein, electrophoresis; 86334-Immunofixation;

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**Monoclonal Protein Study, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 60-mL urine bottle and plastic, 5-mL tube (T465) Specimen Volume: 50 mL Collection Instructions: 1. Collect a random urine specimen. 2. Aliquot specimen between containers. 3. Label specimens appropriately (60-mL urine bottle for protein electrophoresis and immunofixation and 5-mL tube for protein, total). Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 83883 x 2-Nephelometry, each analyte not elsewhere specified; 84155-Protein, total; 84165-Protein, electrophoresis; 86334-Immunofixation;
Additional Information: 1. Random urine, no volume is required. 2. Refrigerate specimen during collection and send refrigerated.

**Specimen Minimum Volume:** 25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 5 days
- Ambient 72 hours

**CPT Code Information:** 84156-Protein, total; 84166-Electrophoresis, protein; 86335-Immunofixation;

### Monoclonal Protein Study, Serum

**Specimen Requirements:**
- **Patient Preparation:** Fasting preferred but not required
- **Container/Tube:** Preferred: Serum gel Acceptable: Red top
- **Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 84155; 84165; 86334;

### Morph Analysis, Automated (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88361

### Morph Analysis, Manual (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88360
Morph Analysis, Nerve (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 88356

Morphine Confirmation, Serum

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80361

Morphology Evaluation (Special Smear)

**Specimen Requirements:** Container/Tube: Slides Specimen Volume: 5 unstained, well-made peripheral blood smears (fingerstick blood) Collection Instructions: If peripheral blood smears (fingerstick blood) is not available, a smear from EDTA blood will be accepted.

**Specimen Minimum Volume:** Smears: 2

**Transport Temperature:**
- Whole blood Ambient (preferred)
- Refrigerated

**CPT Code Information:** 85007; 85060 (if appropriate); 85027 (if appropriate); 89240- (if appropriate); 88184- (If appropriate); 88185- (If appropriate); 88187- (if appropriate); 88188- (if appropriate); 88189- (if appropriate);

Mosquito Species, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003
**MOTH 82738**

**Moth, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FMOT 90157**

**Motilin, Plasma or Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top or serum gel tube(s). Separate immediately and send 3 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top (EDTA) tube(s). Separate immediately and send 3 mL of EDTA plasma frozen in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma). Patient preparation: 1) Patient should be fasting 10 - 12 hours prior to collection of specimen 2) Patient should not be on any antacid medication or medications affecting intestinal motility, if possible, for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Frozen 180 days

**CPT Code Information:** 83519

**G090 65584**

**Motor Neuron Disease Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81403; 81404; 81405; 81406 x 4; 81479

**FMONP 75067**

**Motor Neuropathy Panel**

**Specimen Requirements:** Draw blood in a serum gel tube(s). Spin down and send 4 mL serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 14 days
- Frozen 365 days

**CPT Code Information:** 82784 x 3; 83516 x 7; 84160; 84165; 86334;
Mountain Cedar, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Mouse Epithelium, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Mouse Serum Protein, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Mouse Urine Protein, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

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**Movement Disorder Evaluation, Serum**

**Specimen Requirements:** Patient Preparation: For optimal antibody detection, we recommend blood drawing the specimen before initiation of immunosuppressant medication. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 4 mL

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

Frozen 28 days

Ambient 72 hours

**CPT Code Information:** 83519 x4; 86255 x14; 84182 x1; 86341 x1; 86255 x6 (if appropriate); 86256 x4 (if appropriate); 84182 x2 (if appropriate);

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**Movement Disorder Evaluation, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile Vial Specimen Volume: 4 mL

**Specimen Minimum Volume:** 3.5 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 28 days

Frozen 28 days

Ambient 72 hours

**CPT Code Information:** 83519 x1; 86255 x14; 84182 x1; 86341 x1; 86255 x5 (if appropriate); 86256 x4 (if appropriate); 84182 x2 (if appropriate);

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**MPL Exon 10 Mutation Detection, Blood**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole blood Ambient (preferred) 7 days
**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence

### MPLM 60024

**MPL Exon 10 Mutation Detection, Bone Marrow**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Bone Marrow: Ambient (preferred) 7 days
- Refrigerated: 7 days

**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence

### MPLR 36682

**MPL Exon 10 Mutation Detection, Reflex**

**Specimen Requirements:** Only orderable as a reflex. For more information see MPNR / Myeloproliferative Neoplasm (MPN), JAK2 V617F with reflex to CALR and MPL.

**Specimen Minimum Volume:** Blood and Bone marrow: 0.5 mL

**Transport Temperature:**
- Varies
- Varies 7 days

**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence

### MPLVA 61746

**MPL Exon 10 Mutation Detection, Varies**

**Specimen Requirements:** Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2- mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of DNA. Specimen Stability Information: Refrigerated/Ambient

**Transport Temperature:**
- Varies
- Varies

**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence

### MPNML 44179

**MPL Exon 10 Sequencing, Reflex**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Specimen Type: Blood Container/Tube: Lavender top (EDTA) or yellow top (ACD solution B) Specimen Volume: 4 mL

**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Bone marrow Container/Tube: Lavender top (EDTA) or yellow top (ACD solution B) Specimen Volume: 2 mL
Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of the DNA. Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** Blood/Bone marrow: 0.5 mL

**Transport Temperature:**
Varies Varies 5 days

**CPT Code Information:** 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence

**MSH2I (35508)**

**MSH-2, Immunostain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies

**CPT Code Information:** 88341

**MSH6I (35511)**

**MSH-6, Immunostain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies

**CPT Code Information:** 88341

**MSH2Z (35510)**

**MSH2 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Ambient  (preferred)
Frozen
Refrigerated
CPT Code Information: 81295-MSH2 (mutS homolog 2, colon cancer, nonpolyposis type 1) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**MSH2 Immunostain, Technical Component Only**

**Specimen Requirements:** Specimen Type: Tissue Supplies: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

*TECHONLY* Ambient

(preferred)

Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**MSH6 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies Ambient

(preferred)

Frozen

Refrigerated

CPT Code Information: 81298-MSH6 (mutS homolog 6[E.coli]) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis; ; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, bacterial artificial chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**MSH6 Immunostain, Technical Component Only**

**Specimen Requirements:** Specimen Type: Tissue Supplies: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
**MPCPD**

**mSMART, Plasma Cell Proliferative Disorder (PCPD), FISH**

**Specimen Requirements:** Only orderable as part of a profile. For more information see MSMRT / Mayo Algorithmic Approach for Stratification of Myeloma and Risk-Adapted Therapy Report.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Bone Marrow Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**MTBVP**

**Mt PZA Confirmation, pncA Sequencing (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

**CPT Code Information:** 87153

**MUCN4**

**Mucin 4, Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-Tc, primary; 88341-Tc, if additional IHC;

**MCIVP**

**Mucolipidosis IV, Mutation Analysis, IVS3(-2)A->G and del6.4kb**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 776
Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Prenatal Specimen Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

Transport Temperature: Varies

CPT Code Information: 81290-MCOLN1 (mucolipin 1) (eg, Mucolipidosis, type IV) gene analysis, common variants (eg, IVS3-2A->G, del16.4kb); Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

Mucopolysaccharides (MPS) Qualitative, Urine

Specimen Requirements: Only orderable as part of a profile. See LYSDU / Lysosomal Storage Disorders Screen, Urine. For information regarding qualitative mucopolysaccharides, see MPSSC / Mucopolysaccharides (MPS) Screen, Urine. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 1 mL Pediatric Volume: 0.5 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Urine Frozen 365 days

CPT Code Information: 82542

Mucopolysaccharides (MPS) Screen, Urine

Specimen Requirements: Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

Specimen Minimum Volume: 2 mL

Transport Temperature:
**MPSQN 81473**

**Mucopolysaccharides (MPS), Quantitative, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen (early morning preferred).

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Urine Frozen (preferred) 365 days
- Refrigerated 15 days

**CPT Code Information:** 83864; 82542;

**MQNNR 37999**

**Mucopolysaccharides (MPS), Quantitative, Urine**

**Specimen Requirements:** Only orderable as part of a profile. See LYSDU / Lysosomal Storage Disorders Screen, Urine. For information regarding quantitative mucopolysaccharides, see MPSQN / Mucopolysaccharides (MPS), Quantitative, Urine. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 2 mL Pediatric Volume: 1 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Frozen (preferred) 365 days
- Refrigerated 15 days

**CPT Code Information:** 83864

**SFPAN 62576**

**Mucopolysaccharidosis III, Multi-Gene Panel**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Specimen Type: Blood spot Container/Tube: Preferred: Blood Spot Collection Card (T493) Acceptable: Whatman Protein Saver 903 Paper Specimen Volume: 5
blood spots Collection Instructions: 1. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 2. Do not expose specimen to heat or direct sunlight. 3. Do not stack wet specimens. 4. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**

Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure; Fibroblast Culture for Genetic Testing; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

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**MP3AZ**

**35502**

**Mucopolysaccharidosis IIIA, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

**Transport Temperature:**

Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure code; Additional tests:; Fibroblast Culture for Genetic Testing; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred:

Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

Specimen Minimum Volume: Blood: 1 mL Blood spots: 5 punches, 3-mm diameter

Transport Temperature: Varies Varies

CPT Code Information: 81479-Unlisted molecular pathology procedure; ; Fibroblast Culture for Genetic Testing; 88233-Tissue culture, skin, or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); 88240-Cryopreservation (if appropriate); 35678 Mucopolysaccharidosis IIIC, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Supplies: Fibroblast Biopsy Transport Media (T115) Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**
Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure code; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

### Mucopolysaccharidosis IIID, Full Gene Analysis

**Specimen Requirements:**
Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3

**Transport Temperature:**
Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure code; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

### Mucopolysaccharidosis VI, Full Gene Analysis

**Specimen Requirements:**
Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient
(preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions. Specimen Minimum Volume: Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter Transport Temperature: Varies Varies CPT Code Information: 81479-Unlisted molecular pathology procedure code; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin, or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

**MPSWB**

**Mucopolysaccharidosis, Blood**

**Specimen Requirements:** Patient Preparation: Do not administer low-molecular weight heparin prior to collection Collection Container: Preferred: Lavender top (EDTA) Acceptable: Yellow top (ACD) Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Whole blood: Ambient (preferred) 7 days
- Refrigerated: 7 days

**CPT Code Information:** 82542

**MPSBS**

**Mucopolysaccharidosis, Blood Spot**

**Specimen Requirements:** Patient Preparation: Do not administer low-molecular-weight heparin prior to collection Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Collection Container: Preferred: Card-Blood Spot Collection (Filter Paper) (T493) Acceptable: Whatman Protein Saver 903 paper, Ahlstrom 226 filter paper, Munktell filter paper, local newborn screening card, postmortem screening card, or blood collected in tubes containing ACD or EDTA and dried on filter paper Specimen Volume: 2 dried blood spots Collection Instructions 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.
**Mucor, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Mugwort, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Mulberry, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003
**MRDMM**

**Multiple Myeloma Minimal Residual Disease by Flow, Bone Marrow**

**Specimen Requirements:** Specimen Type: Redirected bone marrow Container/Tube: Preferred: Yellow top (ACD) Acceptable: EDTA Specimen Volume: 4 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Bone Marrow: Ambient (preferred) 72 hours
- Refrigerated: 72 hours

**CPT Code Information:**
- 86003
- 88184: Flow Cytometry; first cell surface, cytoplasmic or nuclear marker
- 88185 x 9: Flow Cytometry; additional cell surface, cytoplasmic or nuclear marker
- 88188: Flow Cytometry Interpretation, 9 to 15 Markers

**MSP2**

**Multiple Sclerosis (MS) Profile**

**Specimen Requirements:** Both serum and spinal fluid are required. Spinal fluid must be obtained within 1 week of serum draw. Specimen Type: Serum Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: Label specimen as serum. Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: Label specimen as spinal fluid.

**Specimen Minimum Volume:**
- Serum: 0.5 mL
- Spinal Fluid: 0.5 mL

**Transport Temperature:**
- CSF: Refrigerated (preferred) 14 days
- Ambient: 14 days
- Frozen: 14 days
- Serum: Refrigerated (preferred) 14 days
- Ambient: 14 days
- Frozen: 14 days

**CPT Code Information:**
- 82040: Albumin, serum
- 82042: Albumin, spinal fluid
- 82784 x 2: IgG, serum and spinal fluid
- 83916: Oligoclonal band, spinal fluid
- 83916: Oligoclonal band, serum

**SUMFZ**

**Multiple Sulfatase Deficiency, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours
Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (e.g., minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2.Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

**Transport Temperature:**

Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure code; ; Additional tests:; Fibroblast Culture for Genetic Testing; 88233-Tissue culture, skin, or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate)

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**MUM1B**

**MUM-1/IRF4 Immunostain, Bone Marrow, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick; B5 fixed, decalcified, paraffin-embedded bone marrow tissue. Acceptable: B5 fixed, decalcified, paraffin-embedded bone marrow tissue block.

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**MUM1**

**MUM-1/IRF4 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**CMUMP**

**81435**

**Mumps Virus Antibodies, IgG and IgM (Separate Determinations), Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial  
Specimen Volume: 0.5 mL  
Specimen Minimum Volume: 0.2 mL  
Transport Temperature:  
CSF Refrigerated (preferred)  
Frozen  

**CPT Code Information:** 86735 x 2

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**MPPG**

**34947**

**Mumps Virus Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel  
Acceptable: Red top  
Specimen Volume: 0.5 mL  
Specimen Minimum Volume: 0.4 mL  
Transport Temperature:  
Serum Refrigerated (preferred)  
Frozen  

**CPT Code Information:** 86735

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**MMPGM**

**61854**

**Mumps Virus Antibody, IgM and IgG (Separate Determinations), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel  
Acceptable: Red top  
Specimen Volume: 1 mL  
Specimen Minimum Volume: 0.9 mL  
Transport Temperature:  
Serum Refrigerated (preferred)  
Frozen  

**CPT Code Information:** 86735-Mumps, IgG; 86735-Mumps, IgM;

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**MMPM**

**80977**

**Mumps Virus Antibody, IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel  
Acceptable: Red top  
Specimen Volume: 1 mL  
Specimen Minimum Volume: 0.5 mL  
Transport Temperature:
**Serum Refrigerated (preferred)**  14 days

**Frozen**  14 days

**CPT Code Information:** 86735

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**FMTAG 57260**

**Murine Typhus Antibodies, IgG**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL serum in a screw-capped vial, shipped frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Frozen (preferred)  30 days
- Refrigerated  5 days

**CPT Code Information:** 86757

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**MBX 70594**

**Muscle Pathology Consultation**

**Specimen Requirements:** Biopsies from different sites require separate orders and separate specimen vials. Preferred: Frozen muscle biopsy tissue Supplies: Muscle Biopsy Kit (T541) Specimen Type: Muscle biopsy tissue (frozen) and/or slides Collection Instructions: 1. Prepare and transport specimen per instructions in Muscle Biopsy Specimen Preparation Sheet in Special Instructions. 2. Patient history and requests should be clearly labeled with correct patient identifiers and pathology accession/case number. 3. All specimens must be labeled with specimen type. Additional Information: Contact Dr. Andrew Engel (Director of the Muscle Laboratory) or Dr. Duygu Selcen (Associate Director of the Muscle Laboratory) for special problems to maximize benefit of the muscle biopsy. Acceptable: Stained muscle biopsy slides 1. Submit all stains performed on the case. If electron microscopy (EM) has been performed, include EM images (either on a CD or as prints). 2. All specimens must be labeled with specimen type.

**Specimen Minimum Volume:** 1.5 cm biopsy

**Transport Temperature:**

- Varies Frozen (preferred)
- Ambient

**CPT Code Information:** 88342-(if appropriate); 88341-(if appropriate); 88346-(if appropriate); 88350-(if appropriate); 88305-(if appropriate); 88313-(if appropriate); 88319-(if appropriate); 88314-(if appropriate); 88321-(if appropriate); 88323-(if appropriate); 88323-26-(if appropriate); 88325-(if appropriate); 8832731-(if appropriate); 883273126-(if appropriate);

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**MUSK 64277**

**Muscle-Specific Kinase (MuSK) Autoantibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL

**Specimen Minimum Volume:** 1 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

CPT Code Information: 83519

**Muscular Dystrophy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404 x 3; 81405 x 9; 81406 x 9; 81407 x 4; 81408 x 4; 81479;

**Mushroom IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**Mushroom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Mustard Food IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
MSTD 82801  
**Mustard, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86001

MYHZ 65603  
**MUTYH Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81406

FBLAS 91407  
**MVista Blastomyces Quantitative Antigen**

**Specimen Requirements:** Submit only one of the following: Serum: Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 2 mL serum refrigerate in a plastic vial. Plasma: Draw blood in EDTA, heparin or sodium citrate tube(s). Spin down and send 2 mL plasma refrigerate in a plastic vial. Urine: Send 2 mL from a random urine collection in sterile screw cap container, shipped refrigerate. CSF: Collect 2 mL of spinal fluid (CSF) in sterile leak proof container. Send refrigerate in a plastic vial. Bronchoalveolar Lavage: Collect 2 mL in sterile leak proof container. Send refrigerate in a plastic vial. Note: 1. Source is required. 2. Separate order required for
each specimen.

**Specimen Minimum Volume:** Blood: 1.8 mL; Serum/Plasma: 1.2 mL; CSF: 0.8 mL; Urine: 0.5 mL; BAL: 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

- Ambient: 14 days
- Frozen

**CPT Code Information:** 87449

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**FMVCO 57122**

**MVista Coccidioides Antigen EIA**

**Specimen Requirements:** 2 mL urine shipped refrigerate Note: Sputolysin and Sodium Hydroxide are interfering substances.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days

- Ambient: 48 hours
- Frozen

**CPT Code Information:** 87449

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**FHST 91957**

**MVista Histoplasma Ag Quantitative EIA**

**Specimen Requirements:** Submit only 1 of the following specimens: Bronchial Washing Collect 2 mL of Bronchial Washing in leak proofed container. Ship refrigereate. Required: 1. Label specimen appropriately (Bronchial Washing) Pericardial Fluid Collect 2 mL of Pericardial Fluid in leak proofed container. Ship refrigerate. Required: 1. Label specimen appropriately (Pericardial Fluid) Note: Minimum volume does not allow for repeats.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

- Ambient: 14 days
- Frozen

**CPT Code Information:** 87385

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**FHIST 90018**

**MVista Histoplasma Ag Quantitative, Serum**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 2 mL serum refrigerate in a plastic vial

**Specimen Minimum Volume:** 1.2 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days  
Ambient 14 days  
Frozen

**CPT Code Information:** 87385

### FHSAG 90017

**MVista Histoplasma Ag Quantitative, Spinal Fluid**

**Specimen Requirements:** Specimen Type: Spinal Fluid  
Sources: CSF  
Container/Tube: Sterile  
Specimen Volume: 2 mL  
Collection Instructions: Collect 2 mL of spinal fluid (CSF). Ship refrigerated. 2 mL of spinal fluid. Send specimen in a plastic, screw-capped vial refrigerated.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days  
Ambient 14 days  
Frozen

**CPT Code Information:** 87385

### MGRM 64289

**Myasthenia Gravis (MG) Evaluation with MuSK Reflex, Serum**

**Specimen Requirements:** Patient Preparation: Patient should have no general anesthetic or muscle-relaxant drugs in the preceding 24 hours.  
Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 3 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days  
Frozen 28 days  
Ambient 72 hours

**CPT Code Information:** 83519 x 2; 83520; 83519 x 3 (if appropriate); 84182 (if appropriate); 86341 (if appropriate);

### MGA1 37425

**Myasthenia Gravis (MG) Evaluation, Adult**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel  
Specimen Volume: 3 mL  
Additional Information: Patient should have no general anesthetic or muscle-relaxant drugs in the previous 24 hours.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days  
Frozen 28 days
**MGP1**  
**37424**  
**Myasthenia Gravis (MG) Evaluation, Pediatric**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL Additional Information: Patient should have no general anesthetic or muscle-relaxant drugs in the previous 24 hours.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  28 days
- Frozen  28 days
- Ambient  72 hours

**CPT Code Information:** 83519 x 2
CPT Code Information: 83519 x 4; 83520; 83519 (if appropriate); 84182 (if appropriate);

SGTF
35860

**MYB (6q23) Rearrangement FISH, Tissue**

**Specimen Requirements:** Provide a reason for referral and pathology report with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block

Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive unstained 5 micron-thick sections placed on positive-charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**

- Tissue Ambient (preferred)
- Refrigerated

CPT Code Information: 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**MYC 70515**

**MYC Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**CTB 8205**

**Mycobacteria and Nocardia Culture**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Body fluid Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Bone marrow Container/Tube: SPS/Isolator System or green top (lithium heparin) Specimen Volume: Entire collection Specimen Type: Gastric washing Container/Tube: Sterile container Specimen Volume: 10 mL Collection Instructions: Neutralize specimen within 4 hours of collection with 100 mg of sodium carbonate per 5 to 10 mL of gastric wash. Specimen Type: Respiratory Sources: Bronchoalveolar lavage fluid, bronchial washing, sputum Container/Tube: Sterile container Specimen Volume: 3 mL Collection
Instructions: 1. Collect 3 respiratory specimens for acid-fast smears and culture in patients with clinical and chest X-ray findings compatible with tuberculosis. 2. These 3 specimens should be collected at 8- to 24-hour intervals (24 hours when possible) and should include at least 1 first-morning specimen.

Specimen Type: Stool Supplies: Stool Collection Kit, Random (T635) Container/Tube: Sterile container Specimen Volume: 5-10 g Specimen Type: Tissue Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Collect a fresh tissue specimen. Specimen Type: Urine Container/Tube: Sterile container Specimen Volume: 20-50 mL Collection Instructions: Collect a random urine specimen. Fresh tissue or body fluid is the preferred specimen type instead of a swab specimen. Specimen Type: Swab Sources: Wound, tissue, or body fluid Container/Tube: Culture transport swab (noncharcoal) culturette Specimen Volume: Adequate specimen Collection Instructions: 1. Before collecting specimen, wipe away any excessive amount of secretion and discharge, if appropriate. 2. Obtain secretions or fluid from source with sterile swab. 3. If smear and culture are requested or both a bacterial culture and mycobacterial culture are requested, collect a second swab to maximize test sensitivity.

**Specimen Minimum Volume:**
- Body Fluid: 1.5 mL
- Respiratory Specimen: 3 mL
- Fresh Tissue: pea-sized piece

**Transport Temperature:**
- Refrigerated (preferred) 7 days
- Ambient 7 days

**CPT Code Information:**
- 87116-Mycobacterial Culture
- 87015-Mycobacteria Culture, Concentration (if appropriate)
- 87118-Id MALDI-TOF Mass Spec AFB (if appropriate)
- 87150-Mycobacteria Probe Ident, Solid (if appropriate)
- 87150-Mycobacteria Probe Ident, Broth (if appropriate)
- 87150-Id, Mtb Speciation, PCR (if appropriate)
- 87153-Mycobacteria Identification by Sequencing (if appropriate)
- 87176-Tissue Processing (if appropriate)

**TBT 80667** Mycobacteria Culture, Concentration (Bill Only)

**Transport Temperature:**
- Varies

**CPT Code Information:**
- 87015

**ISMY 45265** Mycobacteria Ident by Sequencing (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

**CPT Code Information:**
- 87153

**TBPB 45433** Mycobacteria Probe Ident Broth (Bill Only)

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
- Varies
CPT Code Information: 87150

**TBMP 45424**

Mycobacteria Probe Ident Solid (Bill Only)

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
Variates

CPT Code Information: 87150

**CTBBL 82443**

Mycobacterial Culture, Blood

**Specimen Requirements:**
- Container/Tube: Preferred: Green top (sodium or lithium heparin)
- Acceptable: SPS/Isolator System
- Specimen Volume: 8-10 mL per culture
- Collection Instructions: 1. Send specimen in original tube. 2. Please note when sending SPS tube, it must be clearly labeled SPS. If label is obscured, sample may be cancelled, as ACD (yellow top) is not an acceptable tube type.

**Transport Temperature:**
- Whole blood: Ambient (preferred) 72 hours
- Refrigerated: 72 hours

CPT Code Information: 87116-Mycobacterial Culture; 87118-Id MALDI-TOF Mass Spec AFB (if appropriate); 87150-Id, Mtb Speciation, PCR (if appropriate); 87150-Mycobacteria Probe Ident, Broth(if appropriate); 87150-Mycobacteria Probe Ident, Solid(if appropriate); 87153-Mtb PZA Confirmation, pcnA sequence (if appropriate); 87153-Mycobacteria Identification by Sequencing (if appropriate);

**MTBRP 88807**

Mycobacterium tuberculosis Complex, Molecular Detection, PCR

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Mycobacterium tuberculosis DNA is unlikely. If a single specimen is being shared between mycobacteria culture, acid-fast smear, and/or M tuberculosis PCR, a minimum volume of 2 mL for body fluid, 3 mL for respiratory specimen, or a pea-sized piece of tissue should be obtained. Specimen volumes less than indicated may decrease sensitivity of testing. If insufficient volume is submitted, test or tests will be canceled. Preferred Specimens: Body fluid, cerebrospinal fluid (CSF), ocular fluid, respiratory (eg, bronchoalveolar lavage [BAL], bronchial washing, sputum), stool, fresh tissue, bone, bone marrow, or urine. Acceptable Specimens: If no fresh specimen is available, digested respiratory specimens treated with N-acetyl-L-cysteine (NALC)/NaOH are acceptable (eg, BAL, bronchial washing, respiratory fluid, sputum, or tracheal secretion), as are NALC/NaOH-treated gastric washings. Submit only 1 of the following specimens: Specimen Type: Body fluid Sources: Body, bone marrow aspirate, ocular, or CSF Container/Tube: Sterile container Specimen Volume: 1 mL Additional Information: Only fresh, non-NALC/NaOH-digested body fluid is acceptable. Specimen Type: Gastric washing Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: Neutralize specimen within 4 hours of collection with 20 mg of sodium carbonate per 2 mL of gastric washing. Specimen Type: Respiratory Sources: BAL, bronchial washing, or sputum Container/Tube: Sterile container Specimen Volume: 1 mL if only PCR ordered or 3 mL if PCR ordered with smear and culture Specimen Type: Stool Container/Tube: Sterile container Specimen Volume: 5-10 g Additional Information: Only fresh,
non-NALC/NaOH-digested stool is acceptable. Specimen Type: Tissue Sources: Fresh tissue, bone, or
bone marrow biopsy Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection
Instructions: Keep moist with sterile water or sterile saline Additional Information: Only fresh,
non-NALC/NaOH-digested tissue is acceptable. Specimen Type: Urine Container/Tube: Sterile
container Specimen Volume: 1 mL Collection Instructions: Collect a random urine specimen.
Acceptable Specimen Type: NALC/NaOH-digested respiratory specimens Sources: Lavage fluid,
bronchial washing, gastric washing, respiratory fluid, sputum, or tracheal secretion Container/Tube:
Sterile container Specimen Volume: 2 mL Collection Instructions: 1. Submit digested specimen treated
with NALC/NaOH. 2. Clearly indicate on container and order form that specimen is a digested
specimen.

**Specimen Minimum Volume:** Body fluid: 0.5 mL Respiratory specimen-nondigested: 0.5 mL
Fresh tissue or bone: 5 mm NALC-NaOH-digested specimen: 1 mL Gastric washing: 1 mL Stool: 5 g
Urine: 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information:**
87556-Mycobacterium tuberculosis, complex, molecular detection, PCR;
87015-Mycobacteria culture, concentration (if appropriate);

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**MTBT**

**Mycobacterium tuberculosis Complex, Molecular Detection, PCR, Paraffin**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to
be processed in an environment in which contamination of the specimen by Mycobacterium tuberculosis
dNA is unlikely. Specimen Type: Formalin-fixed, paraffin-embedded tissue Sources: Body tissue
Container/Tube: Sterile container Preferred: Formalin-fixed, paraffin-embedded tissue (FFPE)
Acceptable: Biopsy specimen of tissue fixed with formalin and embedded in a paraffin block Specimen
Volume: 5 x 10 mcM sections or 1 paraffin-embedded tissue block Collection Instructions: Block must be
sent for sectioning.

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**
Tissue, Paraffin Ambient
(preferred)
Refrigerated

**CPT Code Information:**
87556-Mycobacterium tuberculosis, complex, molecular detection, PCR,
Paraffin

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**MTBPZ**

**Mycobacterium tuberculosis Complex, Pyrazinamide Resistance by pncA DNA Sequencing**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146)
Container/Tube: Middlebrook 7H10 agar slant Specimen Volume: Isolate Collection Instructions:
Organism must be in pure culture, actively growing.

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 87153-Mtb PZA Confirmation, pncA Sequence

### MPA 81563

**Mycophenolic Acid, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

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**CPT Code Information:** 80180

### MGRP 60755

**Mycoplasma genitalium, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Mycoplasma genitalium DNA is not likely. Submit only 1 of the following specimens: Supplies: M4-RT (T605) Culturette (BBL Culture Swab) (T092) Specimen Type: Swab Sources: Cervix, urethra, urogenital, vaginal

Container/Tube: Preferred: Culture swab transport system (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Acceptable: Swab in transport media: M4, M4-RT (T605), M5, M6, universal transport medium, or ESwar Specimen Volume: One swab

Collection Instructions: 1. Vaginal: Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells. 2. Urethra or Cervical: Collect specimen by inserting swab 1 to 3 cm and rotating 360 degrees. 3. Place swab back into swab cylinder. Supplies: M4-RT (T605) Specimen Type: Fluid Sources: Amniotic, pelvic, prostatic secretion, reproductive drainage, semen

Container/Tube: Preferred: Sterile container Acceptable: Container with 3 mL of transport media: M4, M4-RT (T605), M5, M6 or universal transport media Specimen Volume: 1-2 mL

Specimen Type: Urine, kidney/bladder stone, ureter

Container/Tube: Sterile container Specimen Volume: 10 mL or entire specimen

Specimen Type: Tissue Sources: Placenta, products of conception, genitourinary

Container/Tube: Sterile container Specimen Volume: 5 mm Collection Instructions: Submit only fresh tissue.

**Specimen Minimum Volume:** Pelvic Fluid, Amniotic Fluid, Prostatic Secretions, Semen, Reproductive Drainage or Fluid: 1 mL Urine: 2 mL Swab: 1 swab

**Transport Temperature:**

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**CPT Code Information:** 87798

### MHRP 60756

**Mycoplasma hominis, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Mycoplasma hominis DNA is not likely. Submit only 1 of the following specimens: Supplies: M4-RT (T605) Culturette (BBL Culture Swab) (T092) Specimen Type: Swab Sources: Cervix, urethra, urogenital, vaginal,
chest/mediastinal; bronchus (donor swab); or upper respiratory sources (only infants <3 months:
nasopharynx, nose, throat) Container/Tube: Preferred: Culture swab transport system (Dacron or rayon
swab with aluminum or plastic shaft with either Stuart or Amies liquid medium: T092) Acceptable:
Swab in transport media: M4, M4-RT (T605), M5, M6, universal transport media, or ESwab Specimen
Volume: 1 swab Collection Instructions: Vaginal: 1. Collect specimen by swabbing back and forth over
mucousa surface to maximize recovery of cells. 2. Place swab back into swab cylinder. Urethra or
Cervical: 1. Collect specimen by inserting swab 1 to 3 cm and rotating 360 degrees. 2. Place swab back
into swab cylinder. Wound: 1. Collect specimen by swabbing back and forth over wound surface to
maximize recovery of cells. 2. Place swab back into swab cylinder. Supplies: M4-RT (T605) Specimen
Type: Fluid Sources: Pelvic fluid, amniotic fluid, prostatic secretions, semen, reproductive drainage or
fluid, pleural/chest fluid, chest tube fluid, pericardial fluid, sputum, tracheal secretions, bronchial
wAshings, bronchoalveolar lavage, lung; or nasal washings (only infants <3 months) Container/Tube:
Preferred: Sterile container Acceptable: Container with 3 mL of transport media: M4, M4-RT (T605),
M5, M6, or universal transport media Specimen Volume: 1-2 mL Specimen Type: Synovial Fluid
Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Pink top (EDTA), royal blue top
(EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile
container Specimen Volume: 0.5 mL Collection Instructions: Send specimen in original tube
(preferred). Specimen Type: Urine, kidney/bladder stone, or urer Container/Tube: Sterile container
Specimen Volume: 10 mL or entire specimen Specimen Type: Tissue Sources: Placenta, products of
conception, respiratory, bronchus, chest/mediastinal, bone, or joint Container/Tube: Sterile container
Specimen Volume: 5 mm(3) Collection Instructions: Submit only fresh tissue.

**Specimen Minimum Volume:** Fluid: 1 mL Urine: 2 mL Swab: 1 swab Tissue: 5 mm(3)

**Transport Temperature:**

Varies Refrigerated (preferred) 7 days

Frozen 7 days

**CPT Code Information:** 87798

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**Mycoplasma hominis, Molecular Detection, PCR, Blood**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to
be processed in an environment in which contamination of the specimen by Mycoplasma hominis DNA is
unlikely. Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top
(EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection
Instructions: Send specimen in original tube (preferred).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Whole Blood EDTA Refrigerated (preferred) 7 days

Frozen 7 days

**CPT Code Information:** 87798

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**Mycoplasma hominis, Molecular Detection, PCR, Plasma**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to
be processed in an environment in which contamination of the specimen by Mycoplasma hominis DNA is
unlikely. Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top
(EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot Submission Container/Tube:
Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge and separate
plasma within 24 hours of collection.

**Specimen Minimum Volume:**

**Transport Temperature:**

Whole Blood EDTA Refrigerated (preferred) 7 days

Frozen 7 days

**CPT Code Information:** 87798
**Mycoplasma pneumoniae Antibodies, IgG and IgM, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86738

**Mycoplasma pneumoniae Antibodies, IgG, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see MYCO / Mycoplasma pneumoniae Antibodies, IgG and IgM, Serum. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86738

**Mycoplasma pneumoniae Antibodies, IgM, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see MYCO / Mycoplasma pneumoniae Antibodies, IgG and IgM, Serum. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86738
Mycoplasma pneumoniae Antibody Interpretation

Specimen Requirements: Only orderable as part of a profile. For more information see MYCO / Mycoplasma pneumoniae Antibodies, IgG and IgM, Serum.

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

Mycoplasma pneumoniae Antibody, CF (CSF)

Specimen Requirements: Specimen Type: Spinal Fluid Sources: CSF Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Collect 1 mL of spinal fluid (CSF). Ship refrigerate.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
CSF Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 7 days

CPT Code Information: 86738

Mycoplasma pneumoniae IgA

Specimen Requirements: Draw blood in a red-top tube. Separate serum from cells immediately and send 1 mL of serum frozen in plastic vial. Required: Collection date

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Serum Red Frozen 120 days

CPT Code Information: 86738

Mycoplasma pneumoniae, Molecular Detection, PCR

Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Mycoplasma pneumoniae DNA is unlikely. Specimen source is required. Submit only 1 of the following specimens: Supplies: M4-RT (T605) Specimen Type: Respiratory Sources: Bronchial washing, bronchoalveolar lavage, tracheal secretions, sputum Container/Tube: Preferred: Sterile container Acceptable: Specimen in M4, M4-RT (T605), M5, M6, or UTM Specimen Volume: 1 mL Supplies: M4-RT (T605), Culturette (BBL Culture Swab) (T092) Specimen Type: Swab Sources: Throat, nasal, or nasopharyngeal Container/Tube: Preferred: Culture swab transport system (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium: T092) Acceptable: Culture transport swab (Stuart's media) or place swab in M4, M4-RT (T605), M5, M6, UTM, or ESwab Specimen Volume: Swab Collection Instructions: 1. Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells. 2.
Place swab back into swab cylinder. Specimen Type: Fluid Sources: Pleural, pericardial, cerebrospinal
Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** Respiratory: 0.5 mL; Fluid: 0.5 mL; Swab: 1 swab

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information:** 87581

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**MYD88 Reflex to CXCR4 Mutation Detection**

**Specimen Requirements:** Only orderable as a reflex. For more information, see LPLFX / Reflexive Testing of MYD88 and CXCR4 Submit only 1 of the following specimens: Specimen Type: Peripheral blood Container/Tube: EDTA (lavender top) or ACD solution B (yellow top) Specimen Volume: 3 mL Specimen Stability: Ambient (preferred)/Refrigerated Collection Instructions: 1. Invert several times to mix blood 2. Send specimen in original tube 3. Label specimen as blood Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) or ACD solution B (yellow top) Specimen Volume: 2 mL Specimen Stability: Ambient (preferred)/Refrigerated Collection Instructions: 1. Invert several times to mix bone marrow 2. Send specimen in original tube 3. Label specimen as bone marrow Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire specimen Specimen Stability: Frozen (preferred)/Refrigerated/Ambient Collection Instructions: Label specimen as extracted DNA and list specimen source. Include indication of volume and concentration of the DNA. Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability: Ambient Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability: Ambient

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL Extracted DNA: 20 mcL with a concentration of at least 10 nanograms per mcL

**Transport Temperature:**
Varies 10 days

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**MYD88, L265P, Somatic Gene Mutation, DNA Allele-Specific PCR**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability: Ambient/Refrigerated Specimen Type: Frozen tissue Container/Tube: Plastic container Specimen Volume: 100 mg Specimen Stability: Frozen Collection Instructions: Freeze tissue within 1 hour of collection. Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability: Ambient/Refrigerated Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire specimen Specimen Stability: Frozen/Refrigerated Collection Instructions: Label specimen as extracted DNA and source of specimen and include indication of volume and concentration of the DNA. Specimen Type: Methanol-acetic acid (MAA) fixed pellets Container/Tube: Plastic container Specimen Stability: Ambient/Refrigerated Specimen Type: Peripheral blood Container/Tube: EDTA (lavender top), ACD solution B (yellow top), or heparin (green top) Specimen Volume: 3 mL Specimen Stability: Ambient/Refrigerated Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: EDTA
FMGA 57249  
Myelin Assoc. Glycoprotein (MAG) Antibody w/Reflex to MAG-SGPG & MAG, EIA

Specimen Requirements: Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 30 days
Ambient 24 hours

CPT Code Information: 84181 – Western blot with interpretation and report; 83520 x 2 – Not otherwise specified (if appropriate);

MOGFS 65563  
Myelin Oligodendrocyte Glycoprotein (MOG-IgG1) Fluorescence-Activated Cell Sorting (FACS) Assay, Serum

Specimen Requirements: Patient Preparation: For optimal antibody detection, we recommend drawing the specimen before initiation of immunosuppressant medication. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL

Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 86255; 86256 (if appropriate);

MDSF 35285  
Myelodysplastic Syndrome (MDS), FISH, Blood or Bone Marrow

Specimen Requirements: Submit only 1 of the following specimens: Preferred Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended
and are harmful to the viability of the cells. Acceptable Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL Bone Marrow: 1 mL

**Transport Temperature:**
Varies Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

### Myelodysplastic Syndrome by Flow Cytometry, Bone Marrow

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD) Acceptable: Heparin, EDTA Specimen Volume: 2-5 mL Slides: Include 5 to 10 unstained bone marrow aspirate smears, if possible. Collection Instructions: 1. Submission of bilateral specimens is not required. 2. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Bone Marrow Ambient

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker x 1; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each) x18; 88189-Flow Cytometry Interpretation, 16 or More Markers (if appropriate);

### Myeloid Sarcoma, FISH, Tissue

**Specimen Requirements:** Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides. Include 1 hematoxylin and eosin (H and E)-stained slide.

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88291; 88271 x 2 (if appropriate); 88271 x 2 (if appropriate); 88271 (if appropriate); 88271 x 2 (if appropriate); 88271 x 3 (if appropriate); 88274 w/modifier 52 (if
Myeloma, FISH, Fixed Cells

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 fixed cell pellet Collection Instructions: Place specimen in a sterile container with a 3:1 (or similar) fixative (methanol:glacial acetic acid).

**Transport Temperature:**
Fixed Cell Pellet Bone Marrow Ambient (preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271x2-DNA probe, each; each additional probe set (if appropriate); 88271x1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Myeloperoxidase (MPO) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Myeloperoxidase Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Specimen Minimum Volume: 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

**CPT Code Information:** 83516
Myeloproliferative Neoplasm (MPN), CALR with Reflex to MPL

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: EDTA (Lavender) or ACD-B (yellow top) Specimen Volume: 3 mL Specimen Stability: Ambient (preferred)/Refrigerate Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow aspirate Container/Tube: EDTA (Lavender) or ACD-B (yellow top) Specimen Volume: 2 mL Specimen Stability: Ambient (preferred)/Refrigerate Collection Instructions: 1. Invert several times to mix specimen. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5 to 2 mL tube Specimen Volume: Entire specimen Specimen Stability: Frozen (preferred)/Refrigerate/Ambient Collection Instructions: 1. Indicate volume and concentration of DNA 2. Label specimen as extracted DNA from blood or bone marrow.

Specimen Minimum Volume: Blood/Bone marrow: 0.5 mL

Transport Temperature: Varies Varies 7 days

CPT Code Information: 81219-CALR (calreticulin) (eg, myeloproliferative disorders), gene analysis, common variants in exon 9; 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence (if appropriate);

Myeloproliferative Neoplasm (MPN), JAK2 V617F with Reflex to CALR and MPL

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Lavender top (EDTA) or yellow top (ACD solution B) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Lavender top (EDTA) or yellow top (ACD solution B) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow and provide indication of volume and concentration of the DNA. Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

Specimen Minimum Volume: Blood and Bone marrow: 0.5 mL

Transport Temperature: Varies Varies 7 days

CPT Code Information: 81270-JAK2 (Janus kinase 2) (eg, myeloproliferative disorder) gene analysis, p.Val617Phe (V617F) variant; 81219-CALR (calreticulin) (eg, myeloproliferative disorders), gene analysis, common variants in exon 9 (if appropriate); 81403-MPL (myeloproliferative leukemia virus oncogene, thrombopoietin receptor, TPOR) (eg, myeloproliferative disorder), exon 10 sequence (if appropriate);

Myocardial Antibodies, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86255-Screen; 86256-Titer (if appropriate);

FMYPP 75371 Myocarditis/Pericarditis Panel
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 3 mL Collection instructions: Draw blood in a plain red top tube(s), serum gel tube is acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 2 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 7 days

CPT Code Information: 86658 x 11; 86710 x 2; 86331 x 2; 86632;

G092 65586 Myofibrillar Myopathy Panel (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
CPT Code Information: 81404; 81405 x 2; 81406 x 2; 81479;

MYOD1 70518 Myogenic Differentiation Antigen 1 (MYOD1) Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Transport Temperature:
TECHONLY Ambient 
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

MYOGE 70516 Myogenin Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
MYOGL

**70517**

**Myoglobin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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MYGLS

**35110**

**Myoglobin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 83874

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MYGLU

**35109**

**Myoglobin, Urine**

**Specimen Requirements:** Supplies: Urine Myoglobin Transport Tube (T691) Container/Tube: Plastic, 10-mL urine myoglobin transport tube (T691) Specimen Volume: 5 mL Collection Instructions: 1. Collect a preservative-free, random urine specimen. 2. If specimen is at ambient temperature, aliquot the urine to a urine myoglobin transport tube (T691) within 1 hour of collection. Refrigerate specimen. 3. If specimen is refrigerate, aliquot the urine to a urine myoglobin transport tube (T691) within 2 hours of collection. Additional Information: Urinary myoglobin is highly unstable unless alkalinized with Na2CO3 preservative. Even with alkalinization, myoglobin deterioration is variable and specimen dependent (approximate averages of 10% at 1 day, 20% at 3 days, and 30% at 7 days).

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Urine Refrigerated 7 days

**CPT Code Information:** 83874
MyoMarker Panel 1

Specimen Requirements: Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum refrigerate in plastic vial. Plasma Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 3 mL of EDTA plasma refrigerate in plastic vial.

Specimen Minimum Volume: 0.50 mL Does not allow for repeat testing

Transport Temperature:
- Refrigerated (preferred) 14 days
  - Frozen 60 days
  - Ambient 7 days

CPT Code Information: 83516 â€œ Mi-2; 83516 â€œ PL-12; 83516 â€œ PL-7; 83516 â€œ EJ; 83516 â€œ OJ; 83516 â€œ SRP; 83516 â€œ Ku; 83516 â€œ U2 snRNP; ; ;

MyoMarker Panel 2

Specimen Requirements: Submit only 1 of the following specimens: Serum Collection Container Tube: 10 mL Red Acceptable: 8.5 mL SST Collection Instructions: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum refrigerate in plastic vial. Min Vol: 1 mL Plasma Collection Container Tube: 10 mL EDTA Collection Instructions: Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 3 mL of EDTA plasma refrigerate in plastic vial. Min Vol: 1 mL

Transport Temperature:
- Refrigerated (preferred) 14 days
  - Frozen 60 days
  - Ambient 7 days

CPT Code Information: 83516/Mi-2; 83516/PL-12; 83516/PL-7; 83516/EJ; 83516/OJ; 83516/SRP; 83516/Ku; 83516/U2 snRNP; 86235/Anti-PM/Scl-100 Ab; 86235/Anti-Jo 1 Ab; ;

MyoMarker Panel 3

Specimen Requirements: Submit only 1 of the following specimens: Serum Collection Container Tube: 10 mL Red Acceptable: 8.5 mL SST Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 3 mL of serum refrigerate in a plastic vial. Min Vol: 1 mL Plasma Collection Container Tube: 10 mL EDTA Collection Instructions: Draw blood in a purple-top (EDTA) tube(s). Spin down and send 3 mL EDTA plasma refrigerate in a plastic vial. Min Vol: 1 mL

Specimen Minimum Volume: 1.0 mL

Transport Temperature:
- Refrigerated (preferred) 14 days
  - Frozen 60 days
  - Ambient 7 days
**CPT Code Information:** 83516 x 9-Anti-PL-12 Ab, Anti-PL-7 Ab, Anti-EJ Ab, Anti-OJ Ab, Anti-SRP Ab, Anti-Ku Ab, Anti-MDA5 Ab, Anti-NXP2 Ab, Anti-TIF-1? Ab; 86235 x 7-Anti-U2 RNP, Anti-PM/Scl-100 Ab, Anti-SSA 52 kD IgG Ab, Anti-U1 RNP Ab, Anti-Fibrillarin U3 RNP Ab, Anti-Jo-1 Ab, Anti-Mi-2 Ab;

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### Myopathy Expanded Panel (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81401; 81403; 81404 x 5; 81405 x 13; 81406 x 15; 81407 x 5; 81408 x 5; 81479;

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### Myxoid/Round Cell Liposarcoma, 12q13 (DDIT3 or CHOP) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens:
- **Specimen Type:** Tissue
  - **Preferred:** Tissue block
  - **Collection Instructions:** Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.
- **Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, >300 cells, each probe set (if appropriate);

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### N-Acetylgalactosamine-6-Sulfatase, Leukocytes

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Whole Blood ACD Refrigerated (preferred) 7 days
  - Ambient 7 days

**CPT Code Information:** 82657
N-Acetylgalactosamine-6-Sulfate Sulfatase, Fibroblasts

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/ Ambient

Specimen Minimum Volume: See Specimen Required

Transport Temperature:
Tissue Varies

CPT Code Information: 82657-N-Acetylgalactosamine-6-sulfate sulfatase; 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

N-acetylprocainamid, Serum

Specimen Requirements: Only orderable as part of a profile. For more information see PROCG / Procainamide and NAPA, Serum.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 80192

N-Acetyltransferase 2 Gene (NAT2), Full Gene Sequence

Specimen Requirements: Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Whole Blood EDTA Ambient (preferred) Refrigerated

CPT Code Information: 81479-Unlisted molecular pathology procedure

N-Acetyltransferase 2 Gene (NAT2), Full Gene Sequence, Saliva
**Specimen Requirements:** Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Oragene DNA Self-Collection Kit (T651; fees apply)

Specimen Volume: Full tube

Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:** Saliva Ambient

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**NMHIN** 83011

**N-Methylhistamine, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative. Additional Information: 1. 24-Hour collection is preferred, but a random specimen is also acceptable. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:** Urine Refrigerated (preferred) 8 days

- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 82542

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**SNTX** 65558

**N-terminal Telopeptide (NTx), Serum**

**Specimen Requirements:** Patient Preparation: A morning collection from fasting patients is preferred due to diurnal variation of markers and food effects. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 0.5 mL Collection Instructions: A morning collection from fasting patients is preferred. If not possible, collect the baseline and subsequent specimens under the same circumstances (eg, at same time of day).

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:** Serum Frozen (preferred) 28 days

- Refrigerated 24 hours

**CPT Code Information:** 82523

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**FINA** 91447

**NAbFeron (IFNB-1) Neutralizing Antibody Test**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 2 mL of serum refrigerate in a plastic vial. Note: Sample needs to be
collected either before treatment with interferon or more than 24 hours following the most recent dose. Patient should not be on steroid therapy for at least two weeks prior to testing.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 86382

FNAD
80761

**Nadolol, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens. Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a lavender-top (EDTA) or Pink top tube(s). (Plasma gel tube is not acceptable.) Spin down and send 1 mL of EDTA plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 80375

FNALO
91784

**Naloxone - Total (Conjugated/Unconjugated), Screen, Urine**

**Specimen Requirements:** Collect 1 mL random urine. Send specimen refrigerated in a plastic (preservative-free) urine container.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 80307; 80362 if appropriate;

NAPSN
70519

**Napsin A Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
NARC 82026

**Narcolepsy-Associated Antigen, HLA-DQB1 Typing, Blood**

**Specimen Requirements:** Container/Tube: Yellow top (ACD solution B) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers. Additional Information: Specimen acceptability is based on extracted DNA concentration and not sample age.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Whole Blood ACD-B Refrigerated (preferred)
- Ambient

**CPT Code Information:** 81376-HLA Class II typing, low resolution (eg, antigen equivalents); one locus (eg, HLA-DRB1/3/4/5, -DQB1, -DQA1, -DPB1, or -DPA1), each

FNSUR 75141

**NASH FibroSure**

**Specimen Requirements:** Patient Preparation: Fasting 8 hours Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 3.5 mL Collection Instructions: Draw blood in a plain red-top tube(s) or serum gel tube(s). Spin down and send 3.5 mL of serum in a plastic screw-capped vial. Ship frozen. REQUIRED: 1. Patients age 2. Gender 3. Height (in inches) 4. Weight (in pounds)

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

- Serum Frozen (preferred) 7 days
- Refrigerated 72 hours

**CPT Code Information:** 0003M; Or; 82172; 82247; 82465; 82947; 83010; 83883; 84450; 84460; 84478;

NKSP 60615

**Natural Killer (NK)/Natural Killer T (NKT) Cell Subset Panel**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Sodium heparin Specimen Volume: 5 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**

- WB Sodium Heparin Ambient 30 hours

**CPT Code Information:** 86357; 88184; 88185 x 2;
Natural Killer (NK)/Natural Killer T (NKT) Cell Subsets, Quantitative

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Sodium heparin Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
WB Sodium Heparin Ambient 30 hours

**CPT Code Information:** 86357; 88184; 88185 x 2;

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Necropsy, regional (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient (preferred)
Refrigerated

**CPT Code Information:** 88036

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Necropsy, single organ (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient (preferred)
Refrigerated

**CPT Code Information:** 88037

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Necrotizing Myopathy Evaluation, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 3 mL Collection Instructions: Centrifuge within 2 hours and aliquot 2 mL.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 72 hours

**CPT Code Information:** 86255; 83516; 86256 (if appropriate); 84182 (if appropriate);
**FNECT 57941**

**Nectarine (Prunus spp) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

**FNEFA 91135**

**Nefazodone (Serzone)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80338

**NEGCT 70410**

**Negative Control, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**GCRNA 61552**

**Neisseria gonorrhoeae by Nucleic Acid Amplification (HOLOGIC)**

**Specimen Requirements:** Submit only 1 of the following specimens: Swab specimen must be collected using an Aptima Collection Unisex Swab (T583), or Aptima Collection Multitest Swab (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit). These swabs are contained in the
Aptima Collection Kit. Supplies: Swab, Aptima Male/Female Collection (T583) Specimen Type: Endocervix Container/Tube: Aptima Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Use cleaning swab (white shaft) to remove excess mucus from endocervix and discard. 2. Insert second swab (blue shaft) 1 to 1.5 cm into endocervical canal, and rotate swab gently for 30 seconds. Avoid touching vaginal wall when removing swab. 3. Place second swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 4. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 5. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for 12 months. Supplies: Swab, Aptima Multitest Swab Specimen Collection Kit (T584) Specimen Type: Vaginal Container/Tube: Aptima Collection Multitest Swab (T584) Specimen Volume: Swab Collection Instructions: 1. Insert swab (pink shaft) about 5 cm past introitus and rotate gently for 30 seconds. 2. Place swab into transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection.

Specimen Minimum Volume: Endocervix in PreservCyt: 1mL Urine: 2 mL Swabs (Endocervical, Urethral, Vaginal): Entire collection

Transport Temperature: Varies Refrigerated
(preferred)
Ambient
Frozen
Neisseria gonorrhoeae, Miscellaneous Sites, by Nucleic Acid Amplification

**Specimen Requirements:** Swab specimens must be collected using an Aptima Collection Unisex Swab (T583) or Aptima Collection Multitest Swab (T584). These swabs are contained in the Aptima Collection Kit. Submit only 1 of the following specimens: Supplies: Swab, Aptima Male/Female Collection (T583) Swab, Aptima Multitest Swab Specimen Collection Kit (T584, formerly called Aptima Vaginal Swab Specimen Collection Kit) Specimen Type: Oral/throat or ocular (corneal/conjunctiva) or rectal/anal Container/Tube: Aptima Collection Multitest Swab (T584), or Aptima Swab Collection System (T583) Specimen Volume: Swab Collection Instructions: 1. Swab site using Aptima Collection Multitest Swab (T584) or Aptima Collection Unisex Swab (T583). Note: The white swab provided within the collection kit is a cleaning swab and should not be used for collection. Discard the white cleaning swab. 2. Place swab in transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 3. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 4. Transport swab container to laboratory and store (refrigerated is preferred) within 60 days of collection. Supplies: Aptima Thin Prep Transport Tube (T652) Specimen Type: Peritoneal fluid (pelvic wash, cul-de-sac fluid) Container/Tube: Aptima Specimen Transfer Tube (T652) Specimen Volume: 1 mL Collection Instructions: 1. Transfer 1 mL of specimen into the Aptima Specimen Transfer Tube (T652) within 24 hours of collection. 2. Cap tube securely, and label tube with patient's entire name, and date and time of collection. 3. Transport Aptima Specimen Transfer Tube to laboratory (refrigerated is preferred) within 30 days of collection.

**Specimen Minimum Volume:** Oral/Throat, Ocular, Anal/Rectal Swabs: Entire collection Peritoneal Fluid: 1 mL

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient
- Frozen

Neisseria Meningitidis IgG Vaccine Response

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Spin down and send 0.5 mL serum refrigerated. Note: Serum gel tube is acceptable, but must pour off into a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 5 days

Neonatal Bilirubin, Serum
**Specimen Requirements:** Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: 2 Serum gel Microtainers Acceptable: 2 Red top Microtainers Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel Microtainers should be centrifuged within 2 hours of collection. 2. Red-top Microtainers should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 24 hours
- Frozen 30 days
- Ambient 6 hours

**CPT Code Information:** 82247-Bilirubin, total; 82248-Bilirubin, direct;

**Nettle, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Neu-N Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Neuraminidase, Fibroblasts**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with
1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

Transport Temperature:
Tissue Varies

CPT Code Information: 82657-Neuraminidase; 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

**Neuro-Oncology Expanded Panel with Rearrangement, Tumor**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Slides: 1 Stained and 15 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 15 unstained, nonbaked slides with 5 micron-thick sections of the tumor tissue.

**Specimen Minimum Volume:** Tissue: Entire block. Slides: 1 stained with hematoxylin and eosin and 1 or more unstained nonbaked slides with at least 15,000 total nucleated cells and at least 30% tumor cells

**Transport Temperature:**
Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81455; 88381; MYCNF 35290

**Neuroblastoma, 2p24 (MYCN) Amplification, FISH**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 å£“ DNA probe, each (first probe set), Interpretation and report; 88271x2 å£“ DNA probe, each; each additional probe set (if appropriate); 88271x1 å£“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 å£“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 å£“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 å£“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 å£“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 å£“ Interphase in situ hybridization, 100 to 300 cells, each probe set
**MNBF 35288**

### Neuroblastoma, 2p24 (MYCN) Amplification, FISH, Blood or Bone Marrow

**Specimen Requirements:** Provide a reason for referral and a pathology report documenting the presence of the metastatic tumor present in the sample submitted. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. If FISH analysis was performed on the primary tumor, please provide a copy of the report if available. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Bone Marrow: 1 mL/Blood: 2 mL

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 88276 â€“ Interphase in situ hybridization, >300 cells, each probe set (if appropriate).

**NF2F 70520**

### Neurofilament (2F11)(NF 2F11) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**NFSMI 71354**

### Neurofilament (SMI31) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

PNEFS
84300

Neuroimmunology Antibody Follow-up, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: 13- x 75-mm plastic screw-top vial. Specimen Volume: 4 mL Collection Instructions: Centrifuge within 2 hours. Aliquot and ship in 13- x 75-mm plastic screw-top vial.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days

Frozen 28 days
Ambient 72 hours

CPT Code Information: 83519-59-ACh receptor (muscle) modulating antibodies (if appropriate); 83519-59-AChR ganglionic neuronal antibody (if appropriate); 83519-59-N-type calcium channel antibody (if appropriate); 83519-59-P/Q-type calcium channel antibody (if appropriate); 83519-VGKC (if appropriate); 84182-CRMP-5-IgG Western blot (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-Amphiphysin (if appropriate); 86255-ANNA-1 (if appropriate); 86255-ANNA-2 (if appropriate); 86255-ANNA-3 (if appropriate); 86255-CRMP-5-IgG (if appropriate); 86255-PCA-1 (if appropriate); 86255-PCA-2 (if appropriate); 86255-PCA-Tr (if appropriate); 86255-DPPCS (if appropriate); 86255-DPPIS (if appropriate); 86255-GL1CS (if appropriate); 86255-NMDCS (if appropriate); 86255-AMPCS (if appropriate); 86255-GABCS (if appropriate); 86255-GABIS (if appropriate); 86255-DPPTS (if appropriate); 86255-GL1TS (if appropriate); 86255-CS2CS (if appropriate);

PNEFC
84299

Neuroimmunology Antibody Follow-up, Spinal Fluid
Specimen Requirements: Container/Tube: Sterile vial Specimen Volume: 4 mL

Specimen Minimum Volume: 2 mL

Transport Temperature:
CSF Refrigerated (preferred) 28 days

Frozen 28 days
Ambient 72 hours

CPT Code Information: 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 84182-Amphiphysin Western blot confirmation (if appropriate); 86255-Amphiphysin (if appropriate); 86255-ANNA-1 (if appropriate); 86255-ANNA-2 (if appropriate); 86255-ANNA-3 (if appropriate); 86255-CRMP-5-IgG (if appropriate); 86255-PCA-1 (if appropriate); 86255-PCA-2 (if appropriate); 86255-PCA-Tr (if appropriate); 86255-DPPCS (if appropriate); 86255-DPPIS (if appropriate); 86255-GL1CS (if appropriate); 86255-NMDCS (if appropriate); 86255-AMPCS (if appropriate); 86255-GABCS (if appropriate); 86255-GABIS (if appropriate); 86255-DPPTS (if appropriate); 86255-GL1TS (if appropriate); 86255-CS2CS (if appropriate);
Neurologic Enzyme Evaluation

**Specimen Requirements:** Container/Tube: Yellow top (ACD) Specimen Volume: 10 mL
Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:** Whole Blood ACD-B Refrigerated 8 days

**CPT Code Information:** 82657-RBC enzymes; 82978-Glutathione; 83915-Pyrimidine 5’Nucleotidase;

Neuromuscular Genetic Panels by Next-Generation Sequencing (NGS)

**Specimen Requirements:** Specimen Type: Whole blood Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:** Varies Ambient (preferred)

Frozen Refrigerated

**CPT Code Information:** 81325; 81403; 81404; 81405; 81406; 81407; 81479;

Neuromyelitis Optica (NMO)/Aquaporin-4-IgG Fluorescence-Activated Cell Sorting (FACS) Assay, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 3 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:** Serum Refrigerated (preferred) 28 days

Frozen 28 days
**Ambient** 72 hours

**CPT Code Information:** 86255; 86256-NMO/AQP4-IgG FACS titer (if appropriate);

**NMOFC**

**38325**

**Neuromyelitis Optica (NMO)/Aquaporin-4-IgG Fluorescence-Activated Cell Sorting (FACS) Assay, Spinal Fluid**

**Specimen Requirements:** Collection Container/Tube: Sterile vial Specimen Volume: 3 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 86255; 86256-NMO/AQP4-IgG FACS titer (if appropriate);

**NSE**

**80913**

**Neuron-Specific Enolase (NSE), Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Ambient 7 days

**CPT Code Information:** 83520

**NSESF**

**81796**

**Neuron-Specific Enolase (NSE), Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Ambient 72 hours

**CPT Code Information:** 83520

**NSEI**

**70630**

**Neuron-Specific Enolase Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen
Neuronal Ceroid Lipofuscinosis (NCL, Batten Disease) Panel by Next-Generation Sequencing

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens:

- **Specimen Type:** Whole blood
  - Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)
  - Acceptable: Any anticoagulant
  - Collection Volume: 3 mL
  - Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

- **Specimen Type:** Cultured fibroblasts
  - Container/Tube: T-75 or T-25 flask
  - Collection Volume: 1 full T-75 or 2 full T-25 flasks
  - Stability Information: Ambient (preferred)/Refrigerated

- **Specimen Type:** Amniotic fluid
  - Container/Tube: Amniotic fluid container
  - Collection Volume: 20 mL
  - Stability Information: Refrigerated (preferred)/Ambient

- **Specimen Type:** Chorionic villi
  - Container/Tube: 15-mL tube containing 15 mL of transport media
  - Collection Volume: 20 mg
  - Stability Information: Refrigerated

**Skin biopsy Supplies:**
- Fibroblast Biopsy Transport Media (T115)
- Collection media (eg, minimal essential media, RPMI 1640)
- Solution supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request.

**Blood spot Supplies:**
- Collection card (Whatman Protein Saver 903 Paper)
- Acceptable: Ahlstrom 226 filter paper, or Card- Blood Spot Collection Filter Paper (T493)

**Specimen Minimum Volume:**
- Blood: 1 mL
- Blood Spots: 3, 3-mm diameter
- Amniotic Fluid: 10 mL
- Chorionic Villi: 5 mg

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81406; 81479; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate)
Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**Neuronal Migration Disorders Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81404 x 3; 81405 x 3; 81406 x 4; 81407; 81408 x 2; 81479;

**Neurotensin**

**Specimen Requirements:** Collect 10 mL of blood in special Z-tube (MML supply number T701). Specimen should be separated and 3 mL plasma frozen as soon as possible. Patient preparation: 1) Patient should be fasting 10-12 hours prior to collection. 2) Patient should not be on any antacid medication or medications that affect gastroentero-intestinal function, if possible, for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:** Plasma Frozen 30 days

**CPT Code Information:** 83519

**Neurotransmitter Metabolites (5HIAA, HVA, 3OMD) (CSF)**

**Specimen Requirements:** Medical Neurogenetics collection kit (MML Supply T657) required. Each collection kit contains 5 microcentrifuge tubes. COLLECTION PROTOCOL: 1) CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes Tube 1: 0.5 mL Tube 2: 1.0 mL Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity) Tube 4: 1.0 mL Tube 5: 1.0 mL - If sample's not blood contaminated, the tubes should be placed on dry ice at bedside - If sample's are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen - Store samples at -80 until they can be shipped 2) Complete Medical Neurogenetics, LLC request form. Include test required, sample date and date of birth. 3) Label tubes with patient name and ID number, leaving the tube number viewable. 4) Place samples inside a specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag. 5) Ship samples frozen on dry ice.

**Specimen Minimum Volume:** 4.5 mL

**Transport Temperature:** CSF Frozen

**CPT Code Information:** 82542; 83497; 83150;

**Neurotransmitter Profile 3**

**Specimen Requirements:** Medical Neurogenetics collection kit (MML Supply T657) required.
Each collection kit contains 5 microcentrifuge tubes. COLLECTION PROTOCOL: 1) CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes. Tube 1: 0.5 mL Tube 2: 1.0 mL Tube 3: 1.0 mL (contains antioxidants necessary to protect the same integrity) Tube 4: 1.0 mL Tube 5: 1.0 mL. -If samples not blood contaminated, the tubes should be placed on dry ice at bedside. -If samples are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen. -Store samples at -80°C until they can be shipped. 2) Complete Medical Neurogenetics, LLC request form, marking the following three tests: Neurotransmitter Metabolites, Tetrahydrobiopterin and 5-Methyltetrahydrofolate. Also include sample date and date of birth. 3) Label tubes with patient name and ID number, leaving the tube number viewable. 4) Place samples inside the specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag. 5) Ship samples frozen on dry ice.

**Transport Temperature:**
CSF Frozen

**CPT Code Information:** 82542 – 5-Methyltetrahydrofolate; 82542 – Tetrahydrobiopterin/Neopterin; 82542, 83497, 83150 – Neurotransmitter Metabolites/Amines;

**Newborn Aneuploidy Detection, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL
Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. 3. Advise Express Mail or equivalent if not on courier service. 4. Cord blood is acceptable.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole blood Ambient (preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**Newborn Screen Recommended Panel, Blood Spot**

**Specimen Requirements:** To maximize the benefit of early identification the specimen should be collected as early as possible after 12 hours of age and before 1 week of age. Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood Spot Collection Card (T493) Acceptable: Ahlstrom 226 filter paper and Whatman Protein Saver 903 Paper Specimen Volume: 5 Blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. Do not expose specimen to heat or direct sunlight. 3. Do not stack wet specimens. 4. Keep specimen dry. 5. If collection of a new specimen is necessary, let blood dry on the Blood Spot Collection Card (T493) at ambient temperature in a horizontal position for 3 hours. Additional Information: 1. For
collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 3 completely filled circles on filter paper card

**Transport Temperature:**

- Blood Spot Refrigerated (preferred) 7 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 83789; 82261; 83498; 84443; 84436; 83516; 82776; 82760; 83020; 81401; 81479;

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**NBSE 65138**

**Newborn Screening Expanded Panel, Blood Spot**

**Specimen Requirements:** To maximize the benefit of early identification the specimen should be collected as early as possible after 12 hours of age and before 1 week of age. Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Blood Spot Collection Card (T493) Acceptable: Ahlstrom 226 filter paper and Whatman Protein Saver 903 Paper Specimen Volume: 5 Blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. Do not expose specimen to heat or direct sunlight. 3. Do not stack wet specimens. 4. Keep specimen dry. 5. If collection of a new specimen is necessary, let blood dry on the Blood Spot Collection Card (T493) at ambient temperature in a horizontal position for 3 hours. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 3 completely filled circles on filter paper card

**Transport Temperature:**

- Blood Spot Refrigerated (preferred) 7 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 83789; 82261; 83498; 84443; 84436; 83516; 82776; 82760; 82960; 83020; 81401; 81479;

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**CKNMM 65326**

**Next-Generation Sequencing (NGS) Multiple Myeloma Pre-Analysis Cell Sorting, Bone Marrow**

**Specimen Requirements:** Only orderable as a reflex. See NGSSM / NGSMM Next-Generation Sequencing (NGS), Multiple Myeloma

**Specimen Minimum Volume:** Bone Marrow: 2 mL

**Transport Temperature:**

- Bone Marrow Ambient 4 days

**CPT Code Information:** 88184-Flow Cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 4-Flow Cytometry, additional cell surface, cytoplasmic or nuclear marker (each);
Next-Generation Sequencing Acute Myeloid Leukemia, Therapeutic Gene Mutation Panel (FLT3, IDH1, IDH2, TP53)

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Bone marrow aspirate (preferred) Container/Tube: Preferred: EDTA (lavender top) or ACD (yellow top) Acceptable: Heparin (green top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Peripheral blood Container/Tube: Preferred: EDTA (lavender top) or ACD (yellow top) Acceptable: Heparin (green top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: 100 µL at 20 ng/µL concentration Collection Instructions: Label specimen as extracted DNA and source of specimen Specimen Stability: Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL Extracted DNA: 100 µL at 20 ng/µL concentration

**Transport Temperature:** Varies Varies 14 days

**CPT Code Information:** 81120; 81121; 81245; 81246; 81405;

Next-Generation Sequencing, Acute Myeloid Leukemia, 11-Gene Panel

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Bone marrow aspirate (preferred) Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Green top (heparin), but not preferred Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Peripheral blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Green top (heparin), but not preferred Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Ambient (preferred)/Refrigerate Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5-2 mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire sample Collection Instructions: Label specimen as extracted DNA and source of specimen Specimen Stability: Frozen (preferred) /Refrigerated/Ambient

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL Extracted DNA: 100 µL at 20 ng/µL concentration

**Transport Temperature:** Varies Varies 14 days

**CPT Code Information:** 81450-Targeted genomic sequence analysis panel, hematolymphoid neoplasm or disorder, DNA and RNA when performed, 5-50 genes (eg, BRAF, CEBPA, DNMT3A, EZH2, FLT3, IDH1, IDH2, JAK2, KRAS, KIT, MLL, NRAS, NPM1, NOTCH1), interrogation for sequence variants and copy number variants or rearrangements, or isoform expression of mRNA expression levels, if performed.
Leukemia 4- or 11-Gene Panels

**Specimen Requirements:** Only orderable as a reflex within 6 months of initial testing. For more information see NGAMT / Next-Generation Sequencing Acute Myeloid Leukemia, Therapeutic Gene Mutation Panel (FLT3, IDH1, IDH2, TP53) or NGAML / Next-Generation Sequencing (NGS), Acute Myeloid Leukemia, 8-Gene Panel. No additional specimen is required. This is a bioinformatics review of additional gene regions not analyzed in the original NGAMT or NGAML panels previously ordered. Call 800-533-1710 for assistance with ordering.

**Transport Temperature:**
Varies Varies 14 days

**CPT Code Information:** 81450

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**NGSMM Next-Generation Sequencing (NGS), Multiple Myeloma**

**NGSMM 65090**

**Specimen Requirements:** Specimen Type: Bone marrow aspirate Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. 4. Fresh specimen is required for this test, as testing is performed on sorted cells.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Bone Marrow Ambient 4 days

**CPT Code Information:** 81455- Targeted genomic sequence analysis panel, solid organ or hematolymphoid neoplasm, DNA and RNA analysis when performed, 51 or greater genes (eg, ALK, BRAF, CDKN2A, CEBPA, DNMT3A, EGFR, ERBB2, EZH2, RLT3, IDH1, IDH2, JAK2, KIT, KRAS, MLL, NPM1, NRAS, MET, NOTCH1, PDGRA, PDGFRB, PGR, PIK3CA, PTEN, RET), interrogation for sequence variants and copy number variants or rearrangements, if performed.

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**Nickel, 24 Hour, Urine**

**NIU 8626**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. Aliquot 10 mL in a plastic 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert 4. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.9 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 83885

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**Nickel, Serum**

**NIS 8622**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 2 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 83885

**NICRU**

**Nickel/Creatinine Ratio, Random, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Plastic, 10-mL urine tube (T068) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen in a plastic 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83885 Nickel Concentration; 82570 Creatinine Concentration;

**NICOS**

**Nicotine and Metabolites, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.8 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days
CPT Code Information: 80323; G0480 (if appropriate);

**NICOU**

**82510 Nicotine and Metabolites, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5 mL, aliquot tube (T465) Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 14 days

CPT Code Information: 80323; G0480 (if appropriate);

**NCSRY**

**46918 Nicotine Survey, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.8 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

CPT Code Information: 80323

**NPABZ**

**35521 Niemann-Pick Disease, Types A and B, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient older than 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4.
Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81479-Unlisted molecular pathology procedure; 81330-SMPD1 (Sphingomyelin phosphodiesterase 1, acid lysosomal) (eg, Niemann-Pick disease, Type A) gene analysis, common variants (eg, R496L, L302P, fsP330); 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**NPABP 35519**

**Niemann-Pick Disease, Types A and B, Mutation Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 Flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
Varies

**CPT Code Information:** 81330-SMPD1 (Sphingomyelin phosphodiesterase 1, acid lysosomal) (eg, Niemann-Pick disease, Type A) gene analysis, common variants (eg, R496L, L302P, fsP330); 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ; Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); ; Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**NIEM 9313**

**Niemann-Pick Type C Detection, Fibroblasts**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability
Niemann-Pick Type C Disease, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle’s minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies Varies

**CPT Code Information:** 81404-NPC2 (Niemann-Pick disease, type C2 [epididymal secretory protein E1]) (eg, Niemann-Pick disease type C2), full gene sequence ; 81406-NPC1 (Niemann-Pick disease, type C1) (eg, Niemann-Pick disease), full gene sequence ; ; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

Nitrogen, Total, 24 Hour, Urine

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

Urine Refrigerated (preferred) 7 days

Ambient 7 days

Frozen

**CPT Code Information:** 84999
Nitrogen, Total, Feces

**Specimen Requirements:** Patient Preparation: Laxatives and enemas should not be used during collection. Supplies: Stool Containers - 24, 48, 72 Hours Kit (T291) Container/Tube: Stool container (T291); complies with shipping requirements, do not use other containers. Specimen Volume: Entire collection (24, 48, 72, or 96 hour) Collection Instructions: 1. Entire collection must be submitted which should contain at least 5g to 10 g of feces. 2. See Stool Collection Information Sheet in Special Instructions Additional Information: Barium and boric acid interfere with test procedure.

**Specimen Minimum Volume:** 2.5 g

**Transport Temperature:**
- Fecal Frozen (preferred)
- Ambient 7 days
- Refrigerated 7 days

**CPT Code Information:** 84999

NMR LipoProfile w/IR Markers

**Specimen Requirements:** Submit only one of the following specimens: Serum Draw blood in a plain red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 2 mL serum refrigerate in a plastic vial. Note: 1. Patient should be fasting (12-14 hours) 2. Specimen must be received at LabCorp within 6 days of collection. 3. Label specimen appropriately (serum). Plasma Draw blood in a (lavender-top) EDTA tube(s). (Plasma gel tube is not acceptable.) Spin down and send 2 mL plasma refrigerate in a plastic vial. Note: 1. Patient should be fasting (12-14 hours) 2. Specimen must be received by LabCorp within 6 days of collection. 3. Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Refrigerated 6 days

**CPT Code Information:** 80061; 83704;

Nocardia Stain

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: Entire collection Collection Instructions: Collect a raw specimen. Additional Information: Specimen source is required.

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Ambient 7 days

**CPT Code Information:** 87206; 87176-Tissue processing (if appropriate);

Non-Seasonal Inhalant Allergen Profile

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.75 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003 x 10

NSRGP 63161

Noonan Syndrome and Related Disorders Multi-Gene Panel, Blood
Specimen Requirements: Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL.
Collection Instructions: Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.
Specimen Minimum Volume: 0.6 mL
Transport Temperature:
Whole Blood EDTA Ambient (preferred)
Refrigerated

CPT Code Information: 81479-CBL; 81404-HRAS; 81311-NRAS; 81405 x 2-KRAS, SHOC2; 81406 x 6-BRAF, MAP2K1, MAP2K2, PTPN11, RAF1, SOS1;

_G110 63685

Normal Transferrin CDG Panel (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
CPT Code Information: 81404; 81405 x3; 81406 x6; 81479;

FNOR 75452

Norovirus Detection, Real-Time PCR
Specimen Requirements: 1 mL stool preserved in Cary-Blair medium (Para-Pak Orange) (T058). Ship refrigerated. Collection Instructions: 1. Collect fresh stool and place in preservative within 1 hour of collection. 2. Visibly formed stool is not consistent with Norovirus gastrointestinal disease and should not be submitted for testing.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Fecal Refrigerated (preferred) 14 days
Ambient 5 days

CPT Code Information: 87798 x 2

NEREG 31767

Northeast Regional Allergen Profile
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: 0.75 mL
**NOTRP**

Nortriptyline, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:** Serum Red Refrigerated (preferred) 28 days

- Frozen 28 days
- Ambient 7 days

**CPT Code Information:** 80335; G0480 (if appropriate);

**FCCEV**

NOTCH3 (CADASIL) Sequencing Test

**Specimen Requirements:** Specimen Type: Whole Blood Container/Tube: Lavender-top (EDTA) Specimen Volume: 8 mL Collection Instructions: Draw 8 mL whole blood in a lavender-top (EDTA) tube(s) and ship ambient. Note: Collection date is required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:** Whole blood Ambient (preferred) 10 days

- Refrigerated 10 days

**CPT Code Information:** 81406

**NR4A3**

NR4A3 (9q22.33) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Specimen Volume: Four Consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:** Tissue Ambient (preferred)

- Refrigerated
**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-NA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**PBNP**

**NT-Pro B-Type Natriuretic Peptide (BNP), Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

- Serum Frozen (preferred) 365 days
- Refrigerated 7 days

**CPT Code Information:** 83880

**NTXPR**

**NTX-Telopeptide, Urine**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Plastic, 13-mL urine tube Specimen Volume: 4 mL Collection Instructions: 1. Collect second morning void. 2. No preservative.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Urine Frozen (preferred) 30 days
- Refrigerated 14 days
- Ambient 72 hours

**CPT Code Information:** 82570; 82523;

**NPM1**

**Nucleophosmin (NPM1) Mutation Analysis**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: EDTA (lavender top) or ACD-B (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: EDTA (lavender top) or ACD-B (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow. Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of the DNA Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow.
**Specimen Minimum Volume:** Blood, Bone Marrow: 0.5; Extracted DNA from Blood or Bone Marrow: 10 microliter at 20 ng/microliter

**Transport Temperature:**
- Varies Ambient (preferred) 7 days
- Refrigerated 7 days

**CPT Code Information:** 81310-NPM1 (nucleophosmin) (eg, acute myeloid leukemia) gene analysis; exon 12 variants

### NUT Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### NUTM1 (15q14) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Specimen Volume: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron- thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); ; 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274-w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

### Nutmeg, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### NUTSP

#### Nuts Allergen Profile

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003 x 5

### FNGPG

#### Nuts and Grains Panel IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001 x 17

### FOAKE

#### Oak Live (Quercus virginiana) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
CPT Code Information: 86003

**FROE 57907**

**Oak Red (Quercus rubra) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

CPT Code Information: 86003

**OAK 82673**

**Oak, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**FOATG 57576**

**Oat IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

CPT Code Information: 86001

**OATS 82688**

**Oat, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**OCC2**

**Occupational Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**OCT2**

**OCT-2 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**OCT4**

**OCT3/4 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
**Octopus, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Olanzapine (Zyprexa)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80342

**OLIG2 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Oligoclonal Banding, Serum and Spinal Fluid**

**Specimen Requirements:** Both serum and spinal fluid are required. Spinal fluid must be obtained within 1 week of serum draw. Specimen Type: Serum Container/Tube: Preferred: Red top Acceptable:
Serum gel Specimen Volume: 0.5 mL Collection Instructions: Label specimen as serum. Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 0.5 mL Collection Instructions: Label specimen as spinal fluid.

**Specimen Minimum Volume:** Serum: 0.4 mL/Spinal Fluid: 0.4 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Refrigerated (preferred)</th>
<th>Ambient</th>
<th>Frozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF</td>
<td>14 days</td>
<td>14 days</td>
<td>14 days</td>
</tr>
<tr>
<td>Serum</td>
<td>14 days</td>
<td>14 days</td>
<td>14 days</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 83916-Spinal fluid; 83916-Serum;

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**OLINR 38001**

Oligosaccharide Screen, Random, Urine

**Specimen Requirements:** Only orderable as part of a profile. See LYSDU / Lysosomal Storage Disorders Screen, Urine. For information regarding oligosaccharides, see OLIGU / Oligosaccharide Screen, Urine. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 6 mL Pediatric Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen (early morning preferred). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**

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<tr>
<th>Specimen Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>365 days</td>
<td>15 days</td>
<td>7 days</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 84377

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**OLIGU 64889**

Oligosaccharide Screen, Urine

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 8 mL Pediatric Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. 3. Immediately freeze specimen.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Refrigerated (preferred)</th>
<th>Ambient</th>
<th>Frozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>365 days</td>
<td>15 days</td>
<td>7 days</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 84377
**Olive Black IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**Olive Russian (Elaeagnus angustifolia) IgE**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**Olive Tree, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Olive-Food, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

### OncoHeme Next-Generation Sequencing for Myeloid Neoplasms

**Specimen Requirements:** Submit only 1 of the following specimens:

- **Specimen Type:** Bone marrow aspirate (preferred)
- **Container/Tube:** Preferred: EDTA (lavender top) or ACD (yellow top)
- **Acceptable:** Heparin (green top), but not preferred
- **Specimen Volume:** 2 mL

**Collection Instructions:**
1. Invert several times to mix bone marrow.
2. Send specimen in original tube.
3. Label specimen as bone marrow.

**Specimen Stability:** Ambient (preferred)/Refrigerate

**Specimen Type:** Peripheral blood

- **Container/Tube:** Preferred: EDTA (lavender top) or ACD (yellow top)
- **Acceptable:** Heparin (green top), but not preferred
- **Specimen Volume:** 3 mL

**Collection Instructions:**
1. Invert several times to mix blood.
2. Send specimen in original tube.
3. Label specimen as blood.

**Specimen Stability:** Ambient (preferred)/Refrigerate

**Specimen Type:** Extracted DNA from blood or bone marrow

- **Container/Tube:** 1.5- to 2-mL tube with indication of volume and concentration of the DNA
- **Specimen Volume:** Entire specimen

**Collection Instructions:**
1. Label specimen as extracted DNA and source of specimen

**Specimen Stability:** Frozen (preferred)/Refrigerate/Ambient

**Specimen Minimum Volume:**
- Blood, Bone Marrow: 1 mL
- Extracted DNA: 100 μL at 20 ng/μL concentration

**Transport Temperature:**
- Varies

**CPT Code Information:**
- 81450-Targeted genomic sequence analysis panel, hematolymphoid neoplasm or disorder, DNA and RNA when performed, 5-50 genes (eg, BRAF, CEBPA, DNMT3A, EZH2, FLT3, IDH1, IDH2, JAK2, KRAS, KIT, MLL, NRAS, NPM1, NOTCH1), interrogation for sequence variants and copy number variants or rearrangements, or isoform expression of mRNA expression levels, if performed.

### Onion IgG

**Specimen Requirements:**
- Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable.
- Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

### Onion, IgE

**Specimen Requirements:**
- Container/Tube: Preferred: Red top
- Acceptable: Serum gel
- Specimen Volume: 0.5 mL for each 5 allergens requested

**Additional Information:** Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**Opiate Confirmation, Chain of Custody, Meconium**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required. Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain of custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
Meconium Frozen (preferred) 28 days
Refrigerated 28 days
Ambient 14 days

**CPT Code Information:** 80361; 80365; G0480 (if appropriate);

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**Opiate Confirmation, Meconium**

**Specimen Requirements:** Supplies: Stool container. Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
Meconium Frozen (preferred) 28 days
Refrigerated 28 days
Ambient 14 days

**CPT Code Information:** 80361; 80365; G0480 (if appropriate);

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**Opiates Confirmation, Chain of Custody, Urine**

**Specimen Requirements:** Specimen Type: Urine Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information 1. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADLTX / Adulterants Survey, Chain of Custody, Urine. For additional information, please
refer to ADLTX / Adulterants Survey, Chain of Custody, Urine. 2. Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 14 days

**CPT Code Information:** 80361; 80365; G0480 (if appropriate);

**OPATU 8473**

**Opiates Confirmation, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OPATX / Opiates Confirmation, Chain of Custody, Urine. 2. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, refer to ADULT / Adulterants Survey, Urine. 3. Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 14 days

**CPT Code Information:** 80361; 80365; G0480 (if appropriate);

**FOPIA 75030**

**Opiates, Serum or Plasma, Quantitative**

**Specimen Requirements:** Submit only one of the following: Plasma Draw blood in a gray top potassium oxalate/sodium fluoride, green (sodium heparin), lavender (EDTA) or pink (K2EDTA) tube(s). Spin down and send 1 mL of plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s). Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days
- Ambient 7 days
- Frozen

**CPT Code Information:** 80361, 80365

**OPRM1 89612**

**Opioid Receptor, Mu 1 (OPRM1) Genotype for Naltrexone**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Efficacy, Blood**

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

Whole Blood EDTA  
Ambient (preferred)  
Refrigerated

**CPT Code Information:** 81479

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**OPRMO 60352**

**Opioid Receptor, Mu 1 (OPRM1) Genotype for Naltrexone Efficacy, Saliva**

**Specimen Requirements:** Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that can be ordered together. Supplies: DNA Self-Collection Kit (T651: fees apply) Container/Tube: Oragene DNA Self-Collection Kit (T651) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Saliva Ambient

**CPT Code Information:** 81479

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**FORNG 57632**

**Orange IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Refrigerated (preferred)  28 days  
Frozen  365 days  
Ambient  7 days

**CPT Code Information:** 86001

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**FORE 57917**

**Orange Roughy IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

**Orange, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Orchard Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Oregano IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days
CPT Code Information: 86001

OREG
82496

Oregano, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

OAU
80619

Organic Acids Screen, Urine

Specimen Requirements: Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 10 mL Pediatric: If insufficient collection volume, submit as much specimen as possible in a single container; the laboratory will determine if volume is sufficient for testing. Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

Specimen Minimum Volume: 4 mL

Transport Temperature:
Urine Frozen (preferred) 416 days
Refrigerated 14 days

CPT Code Information: 83919

IDENT
9221

Organism Referred for Identification, Aerobic Bacteria

Specimen Requirements: Supplies: Infectious Container, Large (T146) Specimen Type: Pure culture of organism from source cultured Container/Tube: Agar slant or other appropriate media Specimen Volume: Entire specimen Collection Instructions: 1. Perform isolation of infecting bacteria. 2. Bacterial organism must be submitted in pure culture, actively growing. Do not submit mixed cultures.

Specimen Minimum Volume: NA

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 87077-Organism Referred for Identification, Aerobic Bacteria; 87077-Identification Commercial Kit (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87153-Aerobe Identi by Sequencing (if appropriate); 87077-Additional Identification Procedure (if appropriate); 87147 x 3-Serologic Agglut Method 1 Ident (if appropriate); 87147-Serologic Agglut Method 2 Ident (if appropriate); 87147 x 4-Serologic Agglut Method 3 Ident (if appropriate); 87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate);
Organism Referred for Identification, Anaerobic Bacteria

**Specimen Requirements:** Supplies: Anaerobic Transport Tube (T588) Thioglycollate broth or any other suitable anaerobic transport system Infectious Container, Large (T146) Specimen Type: Pure culture of organism from a source not normally colonized by anaerobes Acceptable Sources: Abscesses, percutaneous transtracheal aspirates, sterile body fluids, suprapubic aspirations, or wounds Container/Tube: Preferred: Anaerobic transport tube (T588) Acceptable: Thioglycollate broth or any other suitable anaerobic transport system Collection Instructions: 1. Perform isolation of infecting bacteria. 2. Bacterial organism must be submitted in pure culture, actively growing. Do not submit mixed cultures.

**Specimen Minimum Volume:** NA

**Transport Temperature:**

- Varies Ambient
- (preferred)
- Refrigerated

**CPT Code Information:** 87076-Organism ref for ID, anaerobic bact; 87076-ld MALDI-TOF mass spec anaerobe (if appropriate); 87076-Anaerobe Ident (if appropriate); 87153-Anaerobe ident by sequencing (if appropriate); 87077-Identification commercial kit (if appropriate); 87077-Ident by MALDI-TOF mass spec (if appropriate); 87077-Bacteria identification (if appropriate); 87077-Additional identification procedure (if appropriate); 87077-Identification Staphylococcus (if appropriate); 87077-Identification Streptococcus (if appropriate); 87147 x 3-Serologic agglut method 1 ident (if appropriate); 87147-Serologic agglut method 2 ident (if appropriate); 87147 x 4-Serologic Agglut Method 3 ident (if appropriate); 87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate); 87153-Aerobe ident by sequencing (if appropriate); 87798-Identification by PCR (if appropriate);

Organophosphate Pesticide Metabolites, Urine

**Specimen Requirements:** Container/Tube: Plastic, preservative-free urine container Specimen Volume: 2 mL Collection Instructions: 1. Collect 2 mL random urine specimen without preservative. 2. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 0.95 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 30 days
- Frozen 180 days
- Ambient 5 days

**CPT Code Information:** 82570; 84430; 81002, if appropriate;

Orotic Acid, Urine

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube Specimen Volume: 10 mL Collection Instructions: 1. Collect a random or timed urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 3 mL
Transport Temperature:
Urine Frozen 30 days

CPT Code Information: 83921

FORRT
57968

Orris Root (Iris florentina) IgE

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
                 Frozen     365 days
                 Ambient   28 days

CPT Code Information: 86003

OPTU
83190

Orthostatic Protein, Timed Collection, Urine

Specimen Requirements: Supplies: 2 Aliquot Tube, 5 mL (T465) Daytime Collection Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a 16-hour (daytime) urine specimen. 2. No preservative. 3. Invert well before taking 4-mL aliquot. 4. Do not over fill aliquot tube 4 mL at most. 5. Collect specimen per instructions in Orthostatic Protein Measurement 24-Hour Urine Collection Site Instructions (T546) in Special Instructions. Nighttime (Supine) Collection Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect an 8-hour (nighttime) urine specimen. 2. No preservative. 3. Invert well before taking 4-mL aliquot at most.

Specimen Minimum Volume: 1 mL from 16-hour (daytime) urine collection/1 mL from 8-hour (nighttime) urine collection

Transport Temperature:
Urine Refrigerated (preferred) 14 days
                 Frozen     14 days
                 Ambient   24 hours

CPT Code Information: 84156 x 2

UOSMB
9257

Osmolality, Body Fluid

Specimen Requirements: Collection Container/Tube: Sterile container Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Test is appropriate for anybody fluid except serum or urine

Specimen Minimum Volume: 1 mL

Transport Temperature:
Body Fluid Frozen (preferred) 7 days
Refrigerated  7 days

CPT Code Information: 83930

UOSMS 9340  Osmolality, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Serum Refrigerated (preferred)  7 days
Frozen  7 days
Ambient  24 hours

CPT Code Information: 83930

UOSMU 9260  Osmolality, Urine

Specimen Requirements: Supplies: Urine tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube Specimen Volume: 5 mL Collection Instructions: Collect a random urine specimen.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Urine Refrigerated (preferred)  7 days
Frozen  7 days

CPT Code Information: 83935

FRAG 9064  Osmotic Fragility, Erythrocytes

Specimen Requirements: Both a whole blood EDTA specimen and a control specimen are required. Patient: Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Immediately refrigerate specimen after draw. Refrigerate at 0 to 4°C. Do not freeze. Freezing causes sample lysis, and tests will not be performed on hemolyzed specimens. 2. Send specimen in original tube. Do not aliquot. 3. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results. 4. Be sure specimen and control are stored and transported together at refrigerator temperature, carefully following proper handling and shipping instructions. Normal Shipping Control: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated, nonsmoking person at the same time as the patient. 2. Label clearly on outermost label normal control. 3. Immediately refrigerate specimen after draw. Refrigerate at 0 to 4°C. Do not freeze. Freezing causes sample lysis, and tests will not be performed on hemolyzed specimens. 4. Send specimen in original tube. Do not aliquot. 5. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Control Refrigerated 72 hours
Whole Blood EDTA Refrigerated 72 hours

CPT Code Information: 85557

OSCAL 80579

Osteocalcin, Serum
Specimen Requirements: Patient Preparation: 1. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. 2. Fasting (12 hours) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Serum Frozen (preferred) 14 days Refrigerated 72 hours

CPT Code Information: 83937

OAPNS 39855

Ova and Parasite Examination, Non-Stool
Specimen Requirements: Specimen Type: Bile Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Bone marrow Container/Tube: Lavender top EDTA and/or slides Specimen Volume: 4 mL Collection Instructions: 1. Bone marrow and/or slides will be accepted for this test. 2. If submitting slides with EDTA tube, label and bag specimens together. Submit to lab refrigerate as 1 collection. Specimen Type: Spinal fluid Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Fluid, abscess, drainage material Sources: Abdominal, ascites, brain, cyst, liver, lymphatic, peritoneal, splenic Container/Tube: Sterile container Specimen Volume: 15 mL Collection Instructions: 1. Place half of collection into preservative (Ecofix or PVA and Formalin) in a ratio of 1:1. 2. Place other half of collection in a sterile container. 3. Label both specimens, bag together, and submit to lab refrigerate as 1 collection. Specimen Type: Respiratory specimens including bronchial washing, bronchoalveolar lavage, sputum Container/Tube: Sterile container Specimen Volume: Entire collection Specimen Type: Tissue Sources: Bladder, brain, colon, intestine, liver, lymph node, lung, muscle, rectal, spleen Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: Place specimen in 1 to 2 drops of sterile saline to keep tissue moist.

Specimen Minimum Volume: Respiratory specimens, spinal fluid, abscess, or drainage material: 0.5 mL; tissue: 3 mm

Transport Temperature: Varies Refrigerated 5 days

CPT Code Information: 87015-Concentration (any type), for infectious agents (if applicable); 87209-Smear, primary source with interpretation; complex special stain (eg, trichrome, iron hematoxylin) for ova and parasites (If applicable); 87210-Wet mount for infectious agents (if applicable); 87207-Smear, primary source, with interpretation; special stain for inclusion bodies or intracellular parasites (if applicable);
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86008

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**Ovarian Antibody Screen with Reflex to Titer, IFA**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 86255; 86256 (if appropriate);

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**Ovomucoid, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86008

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**Ox-Eye Daisy, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

OXVM1 41976
OXA-48 and VIM, PCR (Bill Only)
Specimen Requirements: This test is for billing purposes only. This is not an orderable test.
Transport Temperature: Varies Varies

CPT Code Information: 87798 x2

OXVRP 65043
OXA-48-like (blaOXA-48-like) and VIM (blaVIM) in Gram-Negative Bacilli, Molecular Detection, PCR
Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by oxacillin-hydrolyzing beta-lactamase (OXA-48-like) or Verona integron-encoded metallo-beta-lactamase (VIM) DNA is unlikely. Supplies: Infectious Container, Large (T146) Collection Container/Tube: Slant Specimen Volume: Isolate Collection Instructions: 1. Perform isolation of infecting bacteria. 2. Bacterial organism must be submitted in pure culture, actively growing. Do not submit mixed cultures.
Transport Temperature: Varies Ambient (preferred) Refrigerated

CPT Code Information: 87798 x 2

OVSRP 65042
OXA-48-like (blaOXA-48-like) and VIM (blaVIM) Surveillance, PCR
Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by oxacillin-hydrolyzing beta-lactamase (OXA-48-like) or Verona integron-encoded metallo-beta-lactamase (VIM) DNA is unlikely. Submit only 1 of the following specimens: Preferred: Specimen Type: Perianal, perirectal, rectal, anal Collection Container/Tube: Culture transport swab Acceptable: Supplies: Cary-Blair or Para-Pak C and S Vial (T058) Specimen Type: Preserved stool Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S) Specimen Volume: Representative portion of stool Collection Instructions: Collect fresh stool and submit 1 gram or 5 mL in container with transport medium.
Transport Temperature: Varies Refrigerated (preferred) 7 days Frozen 7 days
DOXA

61644

Oxalate Analysis in Hemodialysate

Specimen Requirements:
- Patient Preparation: Patient should avoid taking vitamin C supplements for 24 hours prior to dialysis.
- Supplies: Urine tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert
- Specimen Volume: 5 mL
- Collection Instructions: Adjust the pH of the specimen to 2.5 to 3.0 with 6N HCl. Additional Information: Nonacidified frozen hemodialysate delivered to the laboratory within 3 days from collection will be accepted and the following comment will be added to the result: In nonacidified hemodialysate stored frozen, oxalate values may increase spontaneously up to 30% (average 11% increase for dialysate oxalate stored for 48 hours, frozen, nonacidified).

Specimen Minimum Volume: 2 mL

Transport Temperature:
- Dialysate Fluid: Frozen 14 days

CPT Code Information: 87798 x 2

OXU

8669

Oxalate, 24 Hour, Urine

Specimen Requirements:
- Container/Tube: Plastic, 5-mL urine tube (T465) or a clean, plastic aliquot container with no metal cap or glued insert
- Specimen Volume: 4 mL
- Collection Instructions: 1. Add 30 mL of toluene as preservative at start of collection or refrigerate specimen during and after collection. 2. Collect urine for 24 hours. 3. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH >8 may indicate bacterial contamination, and testing will be cancelled. Do not attempt to adjust pH as it will adversely affect results. Additional Information: 1. 24-Hour volume is required. 2. Avoid taking large doses (>2 g orally/24 hours) of vitamin C during specimen collection. 3. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

Specimen Minimum Volume: 1 mL

Transport Temperature:
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 83945

ROXU

85631

Oxalate, Pediatric, Random, Urine

Specimen Requirements:
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 7 mL
- Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. 3. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH >8 may indicate bacterial contamination, and testing will be cancelled. Do not attempt to adjust pH as it will adversely affect results. Additional Information: 1. A timed 24-hour urine collection is the preferred specimen for measuring and interpreting this urinary analyte. Random collections normalized to urinary creatinine may be of some clinical use in patients who cannot collect a 24-hour specimen, typically small children. Therefore, this random test is offered for children <16 years old. 2. Avoid taking large doses (>2 g orally/24 hours) of vitamin C prior to specimen collection.

Specimen Minimum Volume: 6 mL
Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 83945

POXA
81408
Oxalate, Plasma

Specimen Requirements: Any client who has never drawn a specimen for this test should call 800-533-1710 or 507-266-5700 and ask for the Renal Laboratory for more detailed instructions. Patient Preparation: 1. Fasting (12 hours) 2. Patient should avoid taking vitamin C supplements for 24 hours prior to draw. Specimen Type: Acidified plasma Collection Container/Tube: Green top (sodium heparin) Submission Container/Tube: Plastic vial Specimen Volume: 5 mL Collection Instructions: 1. Place on wet ice immediately. 2. Centrifuge for 10 minutes at 3,500 rpm at 4°C within 1 hour of draw. 3. Adjust the pH of the plasma specimen to a pH of 1 to 3.5 (ideal range is 2.3-2.7) with approximately 10 mcL concentrated (12N) HCl per 1 mL plasma. Additional Information: Nonacidified specimen can be accepted if the heparinized plasma is properly frozen. However, a disclaimer will be added in nonacidified plasma, oxalate values may increase spontaneously (average 50% increase for plasma oxalate <15 mcmol/L; average 10% increase for plasma oxalate >15 mcmol/L).

Specimen Minimum Volume: 2 mL

Transport Temperature:
Plasma Na Heparin Frozen 14 days

CPT Code Information: 83945

FOXAZ
90108
Oxazepam (Serax), Serum

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

CPT Code Information: 80346; G0480 (if appropriate);

OMHC
81030
Oxcarbazepine Metabolite (MHC), Serum

Specimen Requirements: Container/Tube: Preferred: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose. 2. Spin down within 2 hours of draw.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
**Oxycodone - Free (Unconjugated), Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 2 mL of serum refrigerate in a preservative-free plastic vial.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 80183

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**Oxycodone Screen, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

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**Oxycodone Screen, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OXYSX / Oxycodone Screen, Chain of Custody, Urine. 2. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
Frozen 14 days
Ambient 72 hours

CPT Code Information: 80307

OXYCX
61728
Oxycodone with Metabolite Confirmation, Chain of Custody, Urine

Specimen Requirements: Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing.

Specimen Minimum Volume: 2.5 mL

Transport Temperature:
Urine Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 14 days

CPT Code Information: 80365; G0480 (if appropriate);

OXYCU
62616
Oxycodone with Metabolite Confirmation, Urine

Specimen Requirements: Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are acceptable for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OXYCX / Oxycodone with Metabolite Confirmation, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterant Survey, Urine. For additional information, please refer to ADULT / Adulterant Survey, Urine.

Specimen Minimum Volume: 2.5 mL

Transport Temperature:
Urine Refrigerated (preferred) 28 days
Frozen 28 days
Ambient 14 days

CPT Code Information: 80365; G0480 (if appropriate);

P50B
81432
Oxygen Dissociation, P50, Erythrocytes

Specimen Requirements: Both a whole blood sodium heparin patient specimen and a control specimen are required. Patient: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Immediately refrigerate specimens after draw. Keep at refrigerated
temperatures 2 to 8°C. Do not freeze. Freezing causes sample lysis, and tests will not be performed on hemolyzed specimens. 2. Send specimen in original tube. Do not aliquot. 3. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results. 4. Be sure specimen and control are stored and transported together at refrigerate temperature, carefully following proper handling and shipping instructions. Normal Shipping Control: Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated, nonsmoking person at the same time as the patient. 2. Label clearly on outermost label normal control. 3. Immediately refrigerate specimen after draw. Keep at refrigerated temperatures 2 to 8°C. Do not freeze. 4. Send specimen in original tube. Do not aliquot. 5. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Control: Refrigerated 72 hours
- WB Sodium Heparin: Refrigerated 72 hours

**CPT Code Information:** 82820

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**OXYMNU**

**Oxymorphone Confirmation, Urine**

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 20 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order OXYCX / Oxycodone with Metabolite Confirmation, Chain of Custody, Urine 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Urine Refrigerated (preferred): 28 days
- Frozen: 28 days
- Ambient: 14 days

**CPT Code Information:** 80365; G0480 (if appropriate);

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**OXYBS**

**Oxysterols, Blood Spots**

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Card-Postmortem Screening (Filter Paper) (T525) Container/Tube: Preferred: Blood Spot Collection (Filter Paper) (T493) Acceptable: Ahlstrom 226 filter paper, Munktell filter paper, or Postmortem Screening Card (T525) Specimen Volume: 2 blood spots Collection Instructions: 1. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 2. At least 1 spot should be complete, (ie, unpunched). 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. 6. Dried blood spots collected with EDTA, sodium heparin, lithium heparin, or ACD B-containing devices are acceptable. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special
Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Whole blood  Refrigerated (preferred)  35 days
Ambient  35 days
Frozen  35 days

**CPT Code Information:** 82542

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**OXNP**

**Oxysterols, Plasma**

**Specimen Requirements:** Collection Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Sodium heparin, lithium heparin, or ACD B Submission Container/Tube: Plastic vial Specimen Volume: 0.3 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Plasma  Frozen (preferred)  29 days
Ambient  14 days
Refrigerated  14 days

**CPT Code Information:** 82542

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**OYST**

**Oyster, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum  Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:** 86003

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**FPZ**

**P0 (Pzero) Antibodies**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1.0 mL

**Transport Temperature:**
Serum  Refrigerated (preferred)  5 days
Frozen

CPT Code Information: 84182

P16
70524

p16 (INK4a/CDKN2A) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

P40NA
70526

p40 + Napsin A Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88344-TC

P40
70527

p40 Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

P53
70528

p53 Immunostain, Technical Component Only

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

P57
70529
p57 (KIP2/CDKN1C) Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

P62
70629
p62 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

P63
70530
p63 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### Pacific Squid, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### Pain Clinic Drug Screen, Chain of Custody, Urine

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 30 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: 1. Submitting less than 30 mL will compromise our ability to perform all necessary testing. 2. Not intended for use in employment-related testing.

**Specimen Minimum Volume:** 25 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 90 days
  - Ambient 72 hours

**CPT Code Information:** 80307

### Pain Clinic Drug Screen, Urine

**Specimen Requirements:** Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 30 mL Collection Instructions: 1. Collect a random urine specimen. 2. Submit 30 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. No STATS are accepted for this procedure. 3. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order PDSOX / Pain Clinic Drug Screen, Chain of Custody, Urine. 4. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 5. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 6. Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 25 mL
**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

**PNRCH 65061**

**Pain Clinic Immunoassay Panel, Urine**

**Specimen Requirements:** Only orderable as part of profile. For more information see PNCSU / Pain Clinic Survey, Urine. Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 30 mL

**Collection Instructions:**
1. Collect a random urine specimen.
2. No preservative.

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

**PN10X 62911**

**Pain Clinic Survey 10, Chain of Custody**

**Specimen Requirements:** Only orderable as part of a profile. For more information see PANOX / Pain Clinic Survey 10, Chain of Custody, Urine.

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307

**PANOX 62737**

**Pain Clinic Survey 10, Chain of Custody, Urine**

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 30 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting less than 30 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 20 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** 80307
Pain Clinic Survey, Urine

**Specimen Requirements:**
- Collection Container/Tube: Plastic urine container
- Submission Container/Tube: Plastic, 60-mL urine container (T-313)
- Specimen Volume: 30 mL
- Collection Instructions: 1. Collect a random urine specimen. 2. Submit 30 mL in 1 plastic bottle. 3. No preservative. Additional Information: 1. No specimen substitutions. 2. Submitting less than 30 mL will compromise our ability to perform all necessary testing. 3. No STATS are accepted for this procedure. 4. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order PANOX / Pain Clinic Survey 10, Chain of Custody, Urine. 5. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700.

**Specimen Minimum Volume:** 20 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 72 hours

**CPT Code Information:** PNRCH - 80307; TOPSU - 80364, G0480 (if appropriate);

Paliperidone, Serum

**Specimen Requirements:**
- Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in a preservative-free plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen

**CPT Code Information:** 80342

Pancreastatin

**Specimen Requirements:**
- Collect blood in special tube containing G.I. Preservative (MML supply number T669). Specimen should be separated and 2 mL plasma frozen as soon as possible. NOTE: 1) Patient should be fasting 10 â€“ 12 hours prior to collection. 2) Patient should not be on any medications that may influence Insulin levels, if possible, for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- GI Plasma Frozen 60 days

**CPT Code Information:** 83519
Pancreatic Elastase-1

Specimen Requirements: Preferred Specimen Type: Undiluted stool Supplies: Clean, dry, sterile leak-proof stool container Container/Tube: Clean, dry, sterile leak-proof stool container Specimen Volume: 1 g

Specimen Stability Information: Refrigerated Collection Instructions: 1 gram undiluted feces in clean, dry, sterile leak-proof container. Do not add fixative or preservative. Ship refrigerated.

Specimen Minimum Volume: 0.3 gram

Transport Temperature:
- Frozen: 365 days
- Ambient: 7 days

CPT Code Information: 82656

Pancreatic Polypeptide, Plasma

Specimen Requirements: Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Fasting (8 hours) 2. Specimen must be kept cold at all times following draw. 3. Refrigerated centrifuge is not required. Additional Information: Include patient's age.

Specimen Minimum Volume: 0.35 mL

Transport Temperature:
- Plasma EDTA Frozen: 90 days

CPT Code Information: 83519

Papain, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
- Serum Refrigerated (preferred): 14 days
- Frozen: 90 days

CPT Code Information: 86008

Papaya, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Transport Temperature:
Serum Refrigerated (preferred)  14 days
  Frozen               90 days

CPT Code Information: 86003

**PAPR**

**Paprika, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
  Frozen               90 days

CPT Code Information: 86003

**PFIB**

**Parafibromin, Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
  (preferred)
  Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**PARAV**

**Parainfluenza Virus (Types 1, 2, 3) Antibodies, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Spin down and send 1 mL of serum refrigerated. Note: Serum gel tube is acceptable, but must pour off into a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Ambient (preferred)  7 days
  Frozen               30 days
  Refrigerated       14 days

CPT Code Information: 86790 x 3
**PAVAL 83380**

Paraneoplastic, Autoantibody Evaluation, Serum  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 4 mL  
**Specimen Minimum Volume:** 2 mL  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 28 days  
- Frozen 28 days  
- Ambient 72 hours  

**CPT Code Information:** 83519-ACh receptor (muscle) binding antibody; 83519-AChR ganglionic neuronal antibody; 83519-Neuronal VGKCC autoantibody; 83519-N-type calcium channel antibody; 83519-P/Q-type calcium channel antibody; 83520-Striational (striated muscle) antibodies; 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-1; 86255-PCA-2; 86255-PCA-Tr; 83519-ACh receptor (muscle) modulating antibodies (if appropriate); 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5-IgG Western blot (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86255-AMPCC (if appropriate); 86255-GABCC (if appropriate); 86255-NMDCC (if appropriate); 86256-AMPIC (if appropriate); 86256-GABIC (if appropriate); 86256-NMDIC (if appropriate); 86341-GAD65 antibody assay (if appropriate); 86255-LG1CC (if appropriate); 86255-CS2CC (if appropriate);

**PAC1 37430**

Paraneoplastic, Autoantibody Evaluation, Spinal Fluid  
**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 4 mL  
**Specimen Minimum Volume:** 2 mL  
**Transport Temperature:**  
- CSF Refrigerated (preferred) 28 days  
- Frozen 28 days  
- Ambient 72 hours  

**CPT Code Information:** 86255-AGNA-1; 86255-Amphiphysin; 86255-ANNA-1; 86255-ANNA-2; 86255-ANNA-3; 86255-CRMP-5-IgG; 86255-PCA-1; 86255-PCA-2; 86255-PCA-Tr; 83519-VGKCC (if appropriate); 84182-Amphiphysin Western blot (if appropriate); 84182-CRMP-5 Western blot confirmation (if appropriate); 84182-Paraneoplastic autoantibody Western blot confirmation (if appropriate); 84182-CRMP-5-IgG Western blot confirmation (if appropriate); 86255-NMO/AQP4-IgG FACS (if appropriate); 86255-AMPCC (if appropriate); 86255-GABCC (if appropriate); 86255-NMDCC (if appropriate); 86256-AMPIC (if appropriate); 86256-GABIC (if appropriate); 86256-NMDIC (if appropriate); 86341-GAD65 confirmation (if appropriate); 86256-NMO/AQP4-IgG FACS titer (if appropriate); 86255-LG1CC (if appropriate); 86255-CS2CC (if appropriate);

**PARID 9202**

Parasite Identification  
**Specimen Requirements:** Specimen Type: Parasitic worms, insects, or mites Container/Tube: Sterile container (10% formalin or 70% alcohol may be added if appropriate specimen type) Specimen Volume: Entire specimen Collection Instructions: 1. For scabies, submit skin scrapings on glass
microscope slide. Cover with a clean slide and use a rubber band to hold the 2 slides together. Place the slides in a clean, dry container for transport. 2. Submit whole worms and worm segments in 70% alcohol or formalin. 3. Submit arthropods (ticks, lice, nits, bed bugs, etc) in a clean, dry container.

**Specimen Minimum Volume:** See Specimen Required.

**Transport Temperature:**

- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 87168-Arthropod (if appropriate); 87169-Parasite (if appropriate);

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**Parasitic Examination**

**Specimen Requirements:** Patient Preparation: Specimen collection should be delayed for 7 to 10 days after administration of barium, bismuth, kaolin, magnesia, castor oil or mineral oil, and 2 to 3 weeks after antibiotics have been given since these may interfere with identification of protozoa. Specimen Type: Stool, duodenal aspirate, colonic washing Supplies: ECOFIX Stool Transport Vial (Kit) (T219) Preferred: ECOFIX preservative (T219) Acceptable: 10% Buffered Formalin Stool Transport plus Polyvinyl Acetate (PVA) Stool Transport Specimen Volume: Portion of stool; or entire collection of intestinal specimen Collection Instructions: 1. Place specimen into preservative within 30 minutes of passage or collection. 2. Follow instructions on the container as follows: a. Mix the contents of the tube with the spoon, twist the cap tightly closed, and shake vigorously until the contents are well mixed. Refer to the fill line on the Ecofix vial for stool specimens. b. Do not fill above the line indicated on the container. c. Duodenal aspirates, small bowel aspirates, or colonic washings should be placed in Ecofix in a ratio of 1:1. Additional Information: Stool placed in 10% buffered formalin can be accepted if accompanied by a PVA-preserved specimen; 10% buffered formalin-preserved specimens submitted without an accompanying PVA-preserved specimen will be canceled.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

- Fecal Ambient (preferred) 21 days
- Refrigerated 21 days

**CPT Code Information:** 87177-Concentration (any type), for infectious agents; 87209-Smear, primary source with interpretation; complex special stain (eg, trichrome, iron hematoxylin) for ova and parasites;

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**Parathyroid Hormone (PTH) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated
Parathyroid Hormone (PTH), Serum

Specimen Requirements:
- Patient Preparation: 1. For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. 2. Fasting (12 hours)
- Collection Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1 mL
- Specimen Minimum Volume: 0.5 mL
- Transport Temperature:
  - Serum Frozen (preferred) 180 days
  - Refrigerated 48 hours

CPT Code Information: 83970

Parathyroid Hormone, Fine-Needle Aspiration Biopsy (FNAB)-Needle Wash

Specimen Requirements:
- Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Plain, plastic, screw-top tube
- Specimen Volume: 1 to 1.5 mL
- Collection Instructions:
  1. Needle wash specimens for analysis should be collected in conjunction with cytology specimens.
  2. Have saline available prior to start of procedure. Saline is the only acceptable solution for needle washings.
  3. After each fine-needle aspiration biopsy (FNAB) has been collected and the material in the needle has been expelled onto a slide for cytologic analysis, attach the used FNAB needle to an empty syringe.
  4. Withdraw between 0.10 mL and 0.25 mL of saline up through the needle until the saline starts to fill the hub of the needle or end of the syringe.
  5. Expel this fluid back through the needle into a separate plastic aliquot tube. This is the needle washing used for analysis.
  6. Repeat steps 2 through 4 for each needle pass of the same biopsied site and empty into the same tube, accumulating a total of 0.5 mL to 1.5 mL of fluid to send to the laboratory. (If more than 1 site is biopsied, see Additional Information)
  7. Inspect specimen for visible blood or tissue contamination:
    -a. If bloody, centrifuge specimen and transfer supernatant to a new plastic aliquot tube (5-mL standard tube) to send to laboratory. The supernatant, not the cellular material, is used for analysis.
    -b. If specimen is clear, centrifugation is not necessary.
  8. Refrigerate within 1 to 2 hours of collection and freeze within 2 to 4 hours of collection.
- Additional Information:
  1. If more than 1 site is biopsied, each washing material should be submitted on a separate tube and under a different order number.
  2. A minimum of 0.5 mL is required for testing; however, the total collection volume should not exceed 1.5 mL. Sample volumes outside these parameters may be rejected.
  3. Do not send saline control. This test has been validated to rule-out saline matrix effect.
- Specimen Minimum Volume: 1 to 1.5 mL
- Transport Temperature:
  - Fine Needle Wash Frozen (preferred) 30 days
  - Refrigerated 4 hours

CPT Code Information: 83970

Parathyroid Hormone-Related Peptide (PTHrP), Plasma

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Requirements: Patient Preparation: None required Collection Container/Tube: Ice-cooled, lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.7 mL Collection Instructions: Spin specimen down in a refrigerated centrifuge or in chilled centrifuge cups.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:
Plasma EDTA Frozen 90 days

CPT Code Information: 82397

PPAP
52964

Parental Sample Prep for Prenatal Microarray Testing

Specimen Requirements: This test requires 2 blood specimens: 1 sodium heparin and 1 EDTA. Specimen Type: Whole blood Container/Tube: Green top (sodium heparin) and lavender top (EDTA) Specimen Volume: EDTA: 3 mL Sodium heparin: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimens in original tubes.

Transport Temperature:
Whole blood Ambient (preferred) Refrigerated

CPT Code Information: This test ID contains no charge and serves as a way to correlate proband parental specimens. If additional testing is warranted, the appropriate tests will be added.

PCAB
83728

Parietal Cell Antibodies, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.45 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days Frozen 21 days

CPT Code Information: 83516

PJUD
82877

Parietaria judaica, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days Frozen 90 days
POFF
82549
Parietaria officinalis, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

PARO
83731
Paroxetine, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: Spin down within 2 hours of draw.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

FPRTF
57967
Parrot Australian (Budgerigar) Feathers IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

FPARG
57686
Parsley IgG
Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**PSLY 82765**

**Parsley, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel
Specimen Volume: 0.5 mL for each 5 allergens requested
Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**PPPC 113354**

**Particle Prep (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 88305

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**PARVS 48395**

**Parvovirus B19 Antibodies, IgG and IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86747 x 2

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**PARVG 48320**

**Parvovirus B19 Antibodies, IgG, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see PARVS / Parvovirus B19 Antibodies, IgG and IgM, Serum.
Container/Tube: Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86747

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**PARVN 48322**

**Parvovirus B19 Antibody Interpretation**

**Specimen Requirements:** Only orderable as part of a profile. For more information see PARVS / Parvovirus B19 Antibodies, IgG and IgM, Serum.

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

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**PARVM 48321**

**Parvovirus B19 Antibody, IgM, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see PARVS / Parvovirus B19 Antibodies, IgG and IgM, Serum, Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86747

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**PARVO 83151**

**Parvovirus B19, Molecular Detection, PCR**

**Specimen Requirements:** Specimen source is required. Submit only 1 of the following specimens: Preferred: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 0.5 mL Collection Instructions: 1. Do not centrifuge. 2. Label specimen as amniotic fluid. Specimen Stability Information: Refrigerated (preferred) 7 days/Frozen 7 days Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 0.5 mL Collection Instructions: 1. Do not centrifuge. 2. Label specimen as spinal fluid. Specimen Stability Information: Refrigerated (preferred) 7 days/Frozen 7 days Specimen Type: Synovial fluid Container/Tube: Sterile vial or lavender top (EDTA) Specimen Volume: 0.5 mL Collection Instructions: Label specimen as synovial fluid. Specimen Stability Information: Refrigerated (preferred) 7 days/Frozen 7 days Alternate: Specimen Type: Bone marrow Container/Tube: Sterile container or lavender top (EDTA) Specimen Volume: 0.5 mL Collection Instructions: Label specimen as bone marrow. Specimen Stability Information: Refrigerated 7 days

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days
CPT Code Information: 87798

**PARVP**

**86337**

**Parvovirus B19, Molecular Detection, PCR, Plasma**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Aliquot Tube, 5 mL (T465) Specimen Volume: 0.5 mL Collection Instructions: Spin down and submit plasma in aliquot tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87798

**PARVI**

**70532**

**Parvovirus Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**PFRUT**

**82355**

**Passion Fruit, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**PATHC**

**70317**

**Pathology Consultation**

**Specimen Requirements:** Specimens needed to provide a complete Hematopathology consultation: 1. Recent peripheral blood smear with CBC report 2. Bone marrow biopsy/clot (block and stained slides) 3. Bone marrow aspirate (stained and unstained slides) 4. All pending and final reports
for ancillary testing on above specimens

Supplies: Pathology Packaging Kit (T554) Specimen Type: Slides Slides: Submit hematoxylin and eosin (H and E) and all special stains performed on the case. Include unstained slides and/or a formalin-fixed, paraffin-embedded tissue block if it is anticipated that additional stains or ancillary testing may be necessary. Unstained slides for immunohistochemistry should be charged, if possible, as not all immunohistochemical stains can be performed on uncharged slides. Additional Information: 1. A brief explanatory note or consultative letter is also recommended. 2. This test is not intended for use with wet tissue (tissue that still needs to be processed). 3. If electron microscopy (EM) has been performed, include EM images (either on a CD or as prints).

**Transport Temperature:**
MMLDRY Ambient

**CPT Code Information:** 88321-Consultation and report on referred slides prepared elsewhere (if appropriate); 88323-Consultation and report on referred material requiring preparation of slides (if appropriate); 88325-Consultation, comprehensive, with review of records and specimens, with report on referred material (if appropriate);

### PAX5

**PAX-5 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred) Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### PAX8

**PAX8 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred) Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### FPPCA

**PCA3 (Prostate Cancer Antigen 3)**

**Specimen Requirements:** Urine Collect specimen using PROGENSA Urine Specimen Transport Tube (T695) as follows: Perform an attentive digital rectal exam (DRE) immediately prior to specimen collection (specimen should be collected within approximately 1 hour of DRE). Patient should collect the first 20-30 mL voided urine following the DRE. Process specimen within 4 hours of collection (if specimen cannot be processed within 15 minutes, store refrigerated or on ice and process within 4 hours)
Invert specimen cup 5 times to re-suspend cells. Add 2.5 mL of urine to each of the two GEN-PROBE PROGENSA PSA3 Urine Specimen Transport Tubes. (Do NOT puncture the foil seal on the cape of the transport tube; the specimen must fall between the two black fill lines on the transport tube. Tightly re-cap each urine transport tube and gently invert 5 times to mix; do not shake or vortex. Send both GEN_PROBE PROGENSA transport tubes frozen.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Urine Frozen (preferred) 90 days
- Refrigerated 5 days
- Ambient 24 hours

**CPT Code Information:** 81313

**PDGF (22q13), Dermatofibrosarcoma Protuberans/Giant Cell Fibroblastoma, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue
- Preferred: Tissue block
- Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block

**Collection Instructions:** Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used Acceptable: Slides Specimen Volume: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**PDGFRA Exon 12, Mutation Analysis**

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Bone marrow aspirate (in EDTA) and specimens that have been decalcified are not appropriate specimens for this test. If these are received, testing will be canceled. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required
- Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population
- Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped. Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.
Transport Temperature:
Varies Ambient
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81314-PDGFR (platelet-derived growth factor receptor alpha polypeptide) (eg, gastrointestinal stromal tumor [GIST]), gene analysis, targeted sequence analysis (eg, exons 12, 18); 88381-Microdissection, manual;

PDGFRA Exon 14, Mutation Analysis

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
Varies Ambient
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81314-PDGFR (platelet-derived growth factor receptor alpha polypeptide) (eg, gastrointestinal stromal tumor [GIST]), gene analysis, targeted sequence analysis (eg, exons 12, 18); 88381-Microdissection, manual;

PDGFRA Exon 18, Mutation Analysis

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue block with a minimum of 60% tumor cell population Collection Instructions: Process all specimens into FFPE tissue blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 60% tumor population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
Varies Ambient
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81314-PDGFR (Platelet-derived growth factor receptor alpha polypeptide) (eg, gastrointestinal stromal tumor [GIST]), gene analysis, targeted sequence analysis (eg, exons 12, 18); 88381-Microdissection, manual;
**PDGFRB/TEL Translocation (5;12) for Chronic Myelomonocytic Leukemia (CMML), FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL. Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 

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**Pea Black-Eyed/Cow Pea (Vigna sinensis) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

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**Pea Green IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
FPEAC 57666

**Peach IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

PECH 82816

**Peach, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

FPNTG 57537

**Peanut IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001
Peanut IgG4

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

Peanut, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Peanut, IgE with Reflex to Peanut Components, IgE, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Pear IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
Frozen: 365 days
Ambient: 7 days

**CPT Code Information:** 86001

**PEAR 82807**

**Pear, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen: 90 days

**CPT Code Information:** 86003

**FPCFG 57688**

**Pecan Food IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen: 365 days
- Ambient: 7 days

**CPT Code Information:** 86001

**PCANH 62600**

**Pecan Hickory, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen: 90 days

**CPT Code Information:** 86003
PEC

**PEC 82880**

**Pecan-Food, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**PAS38 83346**

**Pediatric Allergy Screen 3 to 8 Years, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.8 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003 x 6

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**PAS3 83345**

**Pediatric Allergy Screen**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003 x 5

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**PAS8 83347**

**Pediatric Allergy Screen >8 Years, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days
CPT Code Information: 86003 x 5

PBPO 82660

Penicillin G, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

PENIV 82656

Penicillin V, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

PENL 82913

Penicillium chrysogenum, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

PENTS 8239

Pentobarbital, Serum

Current as of January 8, 2019 2:39 am CST   800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80345; G0480 (if appropriate);

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**FPBPG**

**Pepper Bell/Paprika IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**FPBLG**

**Pepper Black IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**FPCYE**

**Pepper Cayenne (Capsicum frutescens) IgE**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days
**FPCHI 57664**

**Pepper Chili IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86003

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**FPEPA 57838**

**Pepsin A Assay**

**Specimen Requirements:** Specimen Type: Tracheal or Bronch Fluid Sources: Tracheal or Bronch Fluid Container/Tube: Standard Transport Tube Specimen Volume: 1 mL Collection Instructions: 1 mL Tracheal or Bronch Fluid shipped frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Frozen 30 days

**CPT Code Information:** 83516, 83986, 84157

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**FPEPS 91638**

**Pepsinogen I**

**Specimen Requirements:** Submit only 1 of the following Serum Draw blood in a plain, red-top tube or serum gel tube(s). Separate immediately and send 3 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top (EDTA) tube(s). Separate immediately and send 3 mL of EDTA plasma frozen in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma). Patient preparation: Patient should be fasting 10-12 hours prior to collection of specimen. Antacids or other medications affecting stomach acidity or gastrointestinal motility should be discontinued, if possible, for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Frozen 365 days

**CPT Code Information:** 83519
**Perampanel, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in a preservative-free plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red: Refrigerated (preferred) 30 days
- Ambient: 30 days
- Frozen

**CPT Code Information:** 80339

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**Perch Ocean**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 28 days
- Frozen: 365 days
- Ambient: 28 days

**CPT Code Information:** 86003

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**Percocet, Urine**

**Specimen Requirements:** Collect 20 mL random urine without preservatives. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 10 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 14 days
- Frozen: 365 days
- Ambient: 72 hours

**CPT Code Information:** 80307; 80365

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**Peripheral Blood (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated
<table>
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<tr>
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<th>Specimen Requirements</th>
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<td>Peripheral Blood Smear Review</td>
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<td>Whole Blood Slide  Refrigerated</td>
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<td>PBTC</td>
<td>Peripheral Blood, TC (Bill Only)</td>
<td>Varies Ambient</td>
<td>This test is for billing purposes only. This is not an orderable test.</td>
<td>85007</td>
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<tr>
<td>PNBX</td>
<td>Peripheral Nerve Pathology Consultation</td>
<td>Varies Refrigerated</td>
<td>Supplies: Nerve Biopsy Specimen Prep Instruction (T580) Specimen Type: Nerve biopsy tissue, slides, or block Collection Instructions: Prepare and transport specimen per instructions in Nerve Biopsy Specimen Preparation Instruction (T580) in Special Instructions. A Nerve Biopsy Kit (call 507-284-8065 to order) containing fixatives and buffer is available for an additional fee.</td>
<td>88305-(if appropriate); 88313-(if appropriate); 88321-(if appropriate); 88323-(if appropriate); 88323-(if appropriate); 88326-(if appropriate); 88325-(if appropriate); 88362-(if appropriate); 88348-(if appropriate); 88342-(if appropriate); 88341-(if appropriate);</td>
</tr>
<tr>
<td>PNPAN</td>
<td>Peripheral Neuropathy Expanded Panel by Next-Generation Sequencing (NGS)</td>
<td></td>
<td>Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: 1. To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate. 2. Prior Authorization is available for this test. Submit the required form with the specimen. Specimen Minimum Volume: 3 mL</td>
<td></td>
</tr>
</tbody>
</table>
Peripheral Smear Interpretation

**Specimen Requirements:** Only orderable as a reflex. For more information see SPSM / Morphology Evaluation (Special Smear). Container/Tube: Slides Specimen Volume: 5 Unstained, well-made peripheral blood smears (fingerstick blood) Collection Instructions: If peripheral blood smears (fingerstick blood) is not available, a smear from EDTA blood will be accepted. Additional Information: Include complete blood count results (if available) and reason for referral.

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred)
Refrigerated

**CPT Code Information:** 81448

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Peripheral T-Cell Lymphoma (PTCL), TP63 (3q28) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Lymph node Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and include 1 hematoxylin and eosin-stained slide. Specimen Type: Solid tumor Preferred: Tissue block Collection Instructions: Submit a FFPE-tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides. Include 1 hematoxylin and eosin-stained slide. Specimen Minimum Volume: Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides. Include 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
Tissue Ambient (preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each
probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**ACASM 83632**

**Pernicious Anemia Cascade**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 4 mL Collection Instructions: 1. Fasting (8 hours) 2. Divide specimen into 3 plastic vials, 1 containing 1 mL, 1 containing 1.5 mL, and 1 containing 1.5 mL 3. Band specimens together. Additional Information: This test should not be ordered on patients who have received vitamin B12 injection within the last 2 weeks.

**Specimen Minimum Volume:** 2.3 mL

**Transport Temperature:**

Serum Frozen 14 days

**CPT Code Information:** 82607-Vitamin B12 assay; 82941-Gastrin (if appropriate); 83921-MMA (if appropriate); 86340-IFBA (if appropriate)

**PDP 64914**

**Peroxisomal Disorder Panel by Next-Generation Sequencing**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Prenatal Specimens Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection Filter paper (T493) Specimen Volume: 3 to 5 Blood Spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3, 3-mm diameter Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
Varies Ambient
(preferred)

Frozen
Refrigerated

**CPT Code Information:** 81405; 81479; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**PNZN 9789**

**Perphenazine, (Trilafon), Serum**

**Specimen Requirements:** Submit only 1 of the following specimens Plasma Draw blood in a green-top (sodium heparin) tube(s). Plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in amber vial (T192) to protect from light. Serum Draw blood in a plain, red-top tube(s). Serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in amber vial (T192) to protect from light.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days

- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80342

**PERS 82353**

**Persimmon, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

- Frozen 90 days

**CPT Code Information:** 86003

**UPH24 84047**

**pH, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. No
preservative. 3. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional
Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation
for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume**: 1 mL

**Transport Temperature**:
Urine Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information**: 83986

**UPHB**

**pH, Body Fluid**

**Specimen Requirements**: Container/Tube: Metal-free container (T173) Specimen Volume: 5 mL
Additional Information: Indicate specimen source.

**Specimen Minimum Volume**: 1 mL

**Transport Temperature**:
Body Fluid Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information**: 83986

**FPHFL**

**pH, Fecal**

**Specimen Requirements**: - 5 g of liquid, random stool. Ship frozen. - Separate specimens must be
submitted when multiple tests are ordered.

**Specimen Minimum Volume**: 1 g

**Transport Temperature**:
Fecal Frozen 7 days

**CPT Code Information**: 83986

**PHU_**

**pH, Urine**

**Specimen Requirements**: Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume:
10 mL Collections Instructions: Collect a random urine specimen.

**Specimen Minimum Volume**: 1 mL

**Transport Temperature**:
Urine Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information**: 83986
Phadiatop (Allergy Screen)

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  28 days
- Frozen  365 days
- Ambient  28 days

**CPT Code Information:** 86005

Phagocytic Primary Immunodeficiency (PID) Gene Panel

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions:
1. Invert several times to mix blood.
2. Send specimen in original tube.
Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks

Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 81479

Phencyclidine (PCP) Confirmation, Chain of Custody,
Meconium

**Specimen Requirements:** Container/Tube: Chain-of-Custody Meconium Kit (T653) includes the specimen containers, seals, and documentation required. Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen. Additional Information: 1. Specimen that arrives with a broken seal does not meet the chain of custody requirements. 2. The laboratory recommends sending chain-of-custody specimens by overnight shipment.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
- Meconium Frozen (preferred) 28 days
- Ambient 28 days
- Refrigerated 28 days

**CPT Code Information:** 83992; G0480 (if appropriate);

Phencyclidine (PCP) Confirmation, Meconium

**Specimen Requirements:** Supplies: Stool container. Small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 1 g (approximately 1 teaspoon) Collection Instructions: Collect entire random meconium specimen.

**Specimen Minimum Volume:** 0.3 g (approximately 1/4 teaspoon)

**Transport Temperature:**
- Meconium Frozen (preferred) 28 days
- Ambient 28 days
- Refrigerated 28 days

**CPT Code Information:** 83992; G0480 (if appropriate); ;

Phencyclidine (PCP), Confirmation, serum

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in a plastic vial. Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 83992

Phencyclidine Confirmation, Chain of Custody, Urine

**Specimen Requirements:** Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 20 mL Collection Instructions: Collect
specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain-of-custody testing. Additional Information: Submitting <20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

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<tr>
<th>Temperature</th>
<th>Duration</th>
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<tr>
<td>Urine</td>
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<tr>
<td>Frozen</td>
<td>14 days</td>
</tr>
<tr>
<td>Ambient</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 83992; G0480 (if appropriate);  

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**Phencyclidine Confirmation, Urine**

**Specimen Requirements:** Supplies: Plastic, 60-mL urine container (T313) Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: 1. No specimen substitutions. 2. For situations where chain of custody is required, a Chain-of-Custody Kit (T282) is available. For chain-of-custody testing, order PCPX / Phencyclidine Confirmation, Chain of Custody, Urine. 3. Additional drug panels and specific requests are available. Call 800-533-1710 or 507-266-5700. 4. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADULT / Adulterants Survey, Urine. For additional information, please refer to ADULT / Adulterants Survey, Urine. 5. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>Refrigerated (preferred) 14 days</td>
</tr>
<tr>
<td>Frozen</td>
<td>14 days</td>
</tr>
<tr>
<td>Ambient</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 83992; G0480 (if appropriate);  

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**Phenobarbital, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred) 7 days</td>
</tr>
<tr>
<td>Frozen</td>
<td>28 days</td>
</tr>
<tr>
<td>Ambient</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

**CPT Code Information:** 80184  

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**Phenosense Combination HIV Drug Resistance Assay**
**Specimen Requirements:** Draw blood into two 5 mL PPT (pearl top) or EDTA (lavender top) tube(s). Immediately centrifuge (within 2 hours of collection) at 1000–1200 x g at room temperature for 10–15 minutes. Do not allow samples to remain in centrifuge after centrifugation. Remove plasma from cells immediately and transfer to a plastic screw cap tube. Freeze immediately. Send 3 mL plasma in a screw-cap vial frozen. RECOMMENDED: 1. Patient's most recent viral load. 2. Viral load collection date. NOTE: 1. Intended for use only for patients with viral loads greater than or equal to 500 copies/mL. For best results, viral loads should be confirmed within 2 weeks prior to submission for testing at Monogram. 2. Patient samples submitted <30 days apart are considered duplicate and will be cancelled.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma EDTA Frozen

**CPT Code Information:** 87900/Infectious agent drug susceptibility phenotype prediction; 87901/Infectious agent genotype analysis by nucleic acid; reverse transcriptase and protease; 87903/Infectious agent phenotype analysis by nucleic acid with drug resistance tissue culture analysis; first through 10 drugs tested; 87904/x11 Each additional drug tested;

**Phenosense Entry HIV Drug Resistance Assay**

**Specimen Requirements:** Draw blood into two 5-mL PPT (pearl top) or EDTA (lavender top) tube. Immediately centrifuge (within 2 hours of collection) at 1000-1200xg at room temperature for 10-15 minutes. Do not allow samples to remain in centrifuge after centrifugation. Remove plasma from cells immediately and transfer to a plastic screw-cap tube. Freeze immediately. Send 3 mL plasma in a screw-cap vial frozen. RECOMMENDED: 1. Patient's most recent viral load 2. Viral load collection date NOTE: 1. Intended for use only for patients with viral loads greater than or equal to 500 copies/mL. For best results, viral loads should be confirmed within two weeks prior to submission for testing at Monogram. 2. Patient samples submitted <30 days apart are considered duplicate and will be canceled.

**Specimen Minimum Volume:** 1.0 mL

**Transport Temperature:**
Plasma EDTA Frozen

**CPT Code Information:** 87903

**Phenosense HIV Drug Resistance Replication Capacity**

**Specimen Requirements:** Draw blood into two 5 mL PPT (pearl top) or EDTA (lavender top) tube(s). Immediately centrifuge (within 2 hours of collection) at 1000-1200 x g at room temperature for 10-15 minutes. Do not allow samples to remain in centrifuge after centrifugation. Remove plasma from cells immediately and transfer to a plastic screw cap tube. Freeze immediately. Send 3 mL plasma in a screw-cap vial frozen. RECOMMENDED: Patient's most recent viral load Viral load collection date NOTE: 1. Intended for use only for patients with viral loads greater than or equal to 500 copies/mL. For best results, viral loads should be confirmed within two weeks prior to submission for testing at Monogram. 2. Patient samples submitted <30 days apart are considered duplicate and will be canceled.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma EDTA Frozen

**CPT Code Information:** 87903; 87904/x11 ;

Current as of January 8, 2019 2:39 am CST     800-533-1710 or 507-266-5700 or mayocliniclabs.com     Page 898
Phenylalanine and Tyrosine, Blood Spot

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Preferred; Blood Spot Collection Card (T493) Acceptable: Whatman Protein Saver 903 Paper, Ahlstrom 226 filter paper Specimen Volume: 2 Blood spots Collection Instructions: 1. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 2. At least 2 spots should be complete, ie, unpunched. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. Dried blood spots collected with EDTA, sodium heparin, lithium heparin, or ACD containing devices are acceptable. 2. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 3. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood Spots: 1

**Transport Temperature:**
- Whole blood: Ambient (preferred) 21 days
- Frozen: 10 days
- Refrigerated: 10 days

**CPT Code Information:** Phenylalanine-84030; Tyrosine-84510;

Phenylalanine and Tyrosine, Plasma

**Specimen Requirements:** Patient Preparation: Fasting (4 hours or more in infants) Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Plasma: Frozen (preferred) 14 days
- Refrigerated: 14 days

**CPT Code Information:** 84030-Phenylalanine; 84510-Tyrosine;

Phenytoin, Free, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 2 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum: Red Refrigerated (preferred) 7 days
- Frozen: 14 days
- Ambient: 7 days

**CPT Code Information:** 80186
Phenytoin, Total and Free, Serum

**Specimen Requirements:**
- Container/Tube: Red top
- Specimen Volume: 2 mL
- Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Red: Refrigerated (preferred) 7 days
  - Frozen: 14 days
  - Ambient: 7 days

**CPT Code Information:**
- Phenytoin, total: 80185; Phenytoin, free: 80186;

Phenytoin, Total and Phenobarbital Group, Serum

**Specimen Requirements:**
- One serum specimen (0.5 mL of serum) may be sent if using a red top tube. Serum for Phenytoin: Container/Tube: Red top Specimen Volume: 0.5 mL
- Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Serum for Phenobarbital: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
- Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL for 2 specimens; 0.25 mL for 1 serum red top

**Transport Temperature:**
- Serum: Refrigerated (preferred) 14 days
  - Frozen: 28 days
  - Ambient: 72 hours
- Serum Red: Refrigerated (preferred) 7 days
  - Frozen: 14 days
  - Ambient: 7 days

**CPT Code Information:**
- 80184-Phenobarbital; 80185-Phenytoin, total;

Phenytoin, Total, Serum

**Specimen Requirements:**
- Container/Tube: Red top Specimen Volume: 0.5 mL
- Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Red: Refrigerated (preferred) 7 days
  - Frozen: 14 days
  - Ambient: 7 days

**CPT Code Information:**
- 80185
Phoma betae, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Phosphatidylglycerol Antibodies, IgG, IgM and IgA

**Specimen Requirements:** Draw blood in a serum gel tube(s). Send 1 mL serum refrigerate.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 14 days
- Frozen 365 days

**CPT Code Information:** 83516 X 3

Phosphatidylinositol Antibodies, IgG, IgM and IgA

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Serum gel tube is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 48 hours

**CPT Code Information:** 83516 x3

Phosphatidylserine/Prothrombin Antibody, IgG and IgM, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  21 days
Frozen  21 days

**CPT Code Information:** 86148 x 2

**PSPTG**  62578

**Phosphatidylserine/Prothrombin Antibody, IgG, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  21 days
- Frozen  21 days

**CPT Code Information:** 86148

**PSPTM**  62579

**Phosphatidylserine/Prothrombin Antibody, IgM, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  21 days
- Frozen  21 days

**CPT Code Information:** 86148

**PLAIF**  70592

**Phospholipase A2 Receptor (PLA2R) Frozen IF, Renal**

**Specimen Requirements:**
- Supplies: Renal Biopsy Kit (T231) Specimen Type: Kidney tissue
- Container/Tube: Renal Biopsy Kit (T231), Zeus/Michel's, Frozen Preferred: Frozen Acceptable: 2 frozen tissue unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Specimen Volume: Entire specimen Collection Instructions: Collect specimens according to the instructions in Renal Biopsy-Procedures of Handling Tissue for Light Microscopy, Immunohistology, and Electron Microscopy in Special Instructions. Additional Information: If standard immunoglobulin and complement immunofluorescence has already been performed, submit the residual frozen tissue (must contain glomeruli) on dry ice.

**Transport Temperature:**
- Special Frozen (preferred)
- Ambient
- Refrigerated

**CPT Code Information:** 88346-primary IF; ;
Phospholipase A2 Receptor Antibodies, Serum

**Specimen Requirements:** Collection Container/Tube: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 8 hours

**CPT Code Information:** EURO-86256; SCOPE-86255;

Phospholipase A2 Receptor, Enzyme Linked Immunosorbent Assay, Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see PLA2R / Phospholipase A2 Receptor Antibodies, Serum.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 8 hours

**CPT Code Information:** 86256

Phospholipase A2 Receptor, Indirect Immunofluorescence Assay, Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see PLA2R / Phospholipase A2 Receptor Antibodies, Serum.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 8 hours

**CPT Code Information:** 86255

Phospholipid (Cardiolipin) Antibodies, IgA, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86147

**CLPMG**
82976

**Phospholipid (Cardiolipin) Antibodies, IgG and IgM, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86147 x 2

**GCLIP**
80993

**Phospholipid (Cardiolipin) Antibodies, IgG, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86147

**MCLIP**
81900

**Phospholipid (Cardiolipin) Antibodies, IgM, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86147

**PPL**
8296

**Phospholipids, Serum**

Specimen Requirements: Patient Preparation: 1. Fasting-overnight (12-14 hours) 2. Patient must
not consume any alcohol for 24 hours before the specimen is drawn. Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL  
**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen

**CPT Code Information:** 84311

### Phosphomannomutase (PMM) and Phosphomannose Isomerase (PMI), Leukocytes

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 3 mL  
**Transport Temperature:**  
Whole Blood ACD Refrigerated 48 hours

**CPT Code Information:** 82657

### Phosphorus (Inorganic), Serum

**Specimen Requirements:** Patient Preparation: Patient should fast overnight (12-14 hours) Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL  
**Transport Temperature:**  
Serum Frozen (preferred) 365 days  
Refrigerated 7 days

**CPT Code Information:** 84100

### Phosphorus, 24 Hour, Urine

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
**Urine**

- Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 84105

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**Phosphorus, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container
Specimen Volume: 1 mL
Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Indicate specimen source.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Refrigerated (preferred) 7 days
- Frozen 365 days

**CPT Code Information:** 84100

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**Phosphorus, Pediatric, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465)
Specimen Volume: 4 mL
Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: A timed 24-hour urine collection is the preferred specimen for measuring and interpreting this urinary analyte. Random collections normalized to urinary creatinine may be of some clinical use in patients who cannot collect a 24-hour specimen, typically small children. Therefore, this random test is offered for children <16 years old.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 7 days

**CPT Code Information:** 84105

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**Phosphorylated TDP43 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693)
Specimen Type: Tissue
Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
Phthalic Anhydride, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

Physician Interp Screen

**Specimen Requirements:** This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88141

Physician Interpretation Conventional

**Specimen Requirements:** This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88141

Physician Interpretation, Diagnostic

**Specimen Requirements:** This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Refrigerated
PIGE

**82781**

**Pig Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 88141

PIGF

**82145**

**Pigeon Feathers, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

PIN2

**70538**

**PIN2 (p63/p504S) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88344-TC

PINE

**82381**

**Pine Nut, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FPINP**

**Pine Ponderosa IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

**FPIAP**

**Pineapple IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**PNAP**

**Pineapple, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
CPT Code Information: 86003

**PINW 9204**

**Pinworm Exam, Perianal**

**Specimen Requirements:** Supplies: Swubes (T300) Specimen Type: Perianal Container/Tube: SWUBE disposable paddle (Falcon) (T300) or similar method of collection Specimen Volume: Entire specimen Collection Instructions: See Pinworm Collection Instructions in Special Instructions.

**Specimen Minimum Volume:** NA

**Transport Temperature:**
- Varies Ambient (preferred) 7 days
- Refrigerated 7 days

CPT Code Information: 87172

**PIPA 81326**

**Pipecolic Acid, Serum**

**Specimen Requirements:** Patient Preparation: Fasting 12 hours or more. (Draw infants and small children just before next feeding) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1.5 mL Collection Instructions: Spin down within 45 minutes of draw.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 94 days
- Refrigerated 14 days

CPT Code Information: 82542

**PIPU 81248**

**Pipecolic Acid, Urine**

**Specimen Requirements:** Supplies: Plastic, 10-mL urine tube (T068) Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Urine Frozen (preferred) 94 days
- Refrigerated 14 days

CPT Code Information: 82542

**PISTA 82808**

**Pistachio, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen

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Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**PIT1**

**72124**

**PIT-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope Preferred: 2 Unstained positively charged glass slide \((25- \times 75- \times 1-\text{mm})\) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Specimen Minimum Volume:** NA

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**PIOR**

**82851**

**Pityrosporum orbiculare, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**PLAP**

**70539**

**Placental Alkaline Phosphatase (PLAP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide \((25- \times 75- \times 1-\text{mm})\) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

PLAI
82837
Plaice, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

PBLI
9302
Plasma Cell Assessment, Blood

Specimen Requirements: Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) Specimen Volume: 10 mL

Specimen Minimum Volume: 4 mL

Transport Temperature:
Whole blood Ambient (preferred) 72 hours
Refrigerated 72 hours

CPT Code Information: 88184-Flow cytometry, cell surface, cytoplasmic; 88185 x 5-Each additional marker; 88187-Flow cytometry interpretation, 2 to 8 markers;

PCPRO
61654
Plasma Cell DNA Content and Proliferation, Bone Marrow

Specimen Requirements: Specimen Type: Redirected bone marrow Preferred: Yellow top (ACD) Acceptable: EDTA or heparin Specimen Volume: 4 mL Specimen Stability Information: <72 hours

Specimen Minimum Volume: 2 mL

Transport Temperature:
Bone Marrow Ambient (preferred)
Refrigerated

CPT Code Information: 88182-Flow cytometry, cell cycle or DNA analysis; 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185 x 5-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); 88187-Flow cytometry interpretation, 2 to 8 Markers
Plasma Cell Proliferative Disorder (PCPD), FISH, Bone Marrow

**Specimen Requirements:** Container/Tube: Green top (sodium heparin) Specimen Volume: 1-3 mL Collection Instructions: Invert several times to mix bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Bone Marrow
  - Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88271x2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271x2-DNA probe, each; each additional probe set (if appropriate); 88271x1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Plasma Cell Proliferative Disorder, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides. Include 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue
  - Ambient (preferred)
  - Refrigerated

**CPT Code Information:** 88271x2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271x2-DNA probe, each; each additional probe set (if appropriate); 88271x1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Plasma Hemoglobin, Plasma

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 2 mL Collection Instructions: 1. Spin down and transfer plasma to an aliquot tube within 2 hours of draw. 2. IMPORTANT-Results could be falsely elevated due to artifactual postdraw RBC lysis, if not spun down...
within 2 hours.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Plasma EDTA  Refrigerated (preferred)  7 days
- Frozen  7 days
- Ambient  4 days

**CPT Code Information:** 83051

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**PAI1**

**86083**

**Plasminogen Activator Inhibitor Antigen, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85415

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**FPAIG**

**75142**

**Plasminogen Activator Inhibitor-1, 4G/5G Genotyping (PAI-1 Polymorphism)**

**Specimen Requirements:** Specimen Type: Whole Blood Preferred: EDTA Acceptable: ACD (Yellow top) Specimen volume: 5 mL Collection Instructions: Draw 5 mL whole blood in a lavender top (EDTA) or yellow top (ACD) tube. Send refrigerated.

**Specimen Minimum Volume:** 1.00 mL

**Transport Temperature:**
- Whole blood  Refrigerated (preferred)  8 days
- Ambient  8 days

**CPT Code Information:** 81400

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**PSGN**

**9079**

**Plasminogen Activity, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge, remove plasma, centrifuge plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. A double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation
assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85420

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**FPABI 75006**

**Platelet Antibodies, Indirect (IgG, IgM, IgA)**

**Specimen Requirements:** Draw blood in a serum gel tube(s), plain red top tube(s), is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Refrigerated 21 days

**CPT Code Information:** 86022 x 3

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**PLABN 35794**

**Platelet Antibody Screen, Serum**

**Specimen Requirements:** Patient Preparation: Do not collect within 72 hours of a platelet transfusion. Transfused platelets will interfere with this assay. Container/Tube: Red top Specimen Volume: 1.5 mL Collection Instructions: Serum should be separated from red cells prior to shipping.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Red  Frozen (preferred)  365 days

Refrigerated       48 hours

**CPT Code Information:** 86022

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**PNP 8866**

**Platelet Neutralization Procedure**

**Specimen Requirements:** Only orderable as part of a profile. For more information see: LUPPR / Lupus Anticoagulant Profile THRMP / Thrombophilia Profile BDIAL / Bleeding Diathesis Profile, Limited PROCT / Prolonged Clot Time Profile

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

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**PLAFL 64278**

**Platelet Surface Glycoprotein by Flow Cytometry, Blood**

**Specimen Requirements:** Supplies: Ambient Mailer-Critical Specimens Only (T668) Collection Container/Tube: ACD solution (A or B) Specimen Volume: 6 mL Pediatric Volume: 1 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** Adult: 1 mL Pediatric 200 mcL
**Transport Temperature:**
Whole Blood ACD  Ambient 4 days

**CPT Code Information:** 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each) X5; 88187-Flow cytometry interpretation, 2 to 8 markers;

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**Platelet Transmission Electron Microscopic Study**

**Specimen Requirements:** Send specimen Monday through Wednesday. Supplies: Ambient Mailer-Critical Specimens Only (T668) Collection Container/Tube: Preferred: Yellow top (ACD, solution B)  Acceptable: Yellow top (ACD, solution A)  Specimen Volume: 6 mL  Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole Blood ACD  Ambient 72 hours

**CPT Code Information:** 85390; 88348;

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**Platinum, Serum**

**Specimen Requirements:** Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184)  Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173)  Specimen Volume: 1 mL  Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  30 days
Ambient  30 days
Frozen  30 days

**CPT Code Information:** 83018

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**Plazomicin, Plasma**

**Specimen Requirements:** Collection Container/Tube: Preferred: Lavender top (K2 EDTA)  Acceptable: K3 EDTA, Na EDTA, Na Citrate, Na Heparin, Li Heparin Submission Container/Tube: Plastic vial  Specimen Volume: 1.5 mL  Collection Instructions: 1. Trough specimens are preferred for monitoring concentrations and should be drawn immediately before the next scheduled dose. 2. Spin
down within 2 hours of draw. Plasma must be separated from cells within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80299

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**PLUM 82809**

**Plum, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**PMLR 84114**

**PML/RARA Quantitative, PCR**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 5 days
- Ambient 72 hours

**CPT Code Information:** 81315-PML/RARalpha (t(15;17)), (PML-RARA regulated adaptor molecule 1) (eg promyelocytic leukemia) translocation analysis; common breakpoints (eg, intron 3 and intron 6), qualitative or quantitative

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**PMPDD 66569**

**PMP22 Gene, Large Deletion and Duplication Analysis**

**Specimen Requirements:** Patient Preparation A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred:
Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81324

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**PMS2I 35525**

**PMS-2, Immunostain (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

**CPT Code Information:** 88342

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**PMS2Z 35528**

**PMS2 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Prior Authorization is available for this test. Submit the required form with the specimen.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81317-PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis; ; 81319-PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (eg, hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants;

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**PMS2 70540**

**PMS2 Immunostain, Technical Component Only**

**Specimen Requirements:** Specimen Type: Tissue Supplies: Immunostain Technical Only Envelope (T693) Preferred: 2 Unstained positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
**Pneumococcal Antibody Panel (12 Serotype)**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Pneumocystis jiroveci, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Pneumocystis species DNA is unlikely.

Submit only 1 of the following specimens: Preferred Specimen Type: Body fluid Sources: Pleural Container/Tube: Sterile container Specimen Volume: 1 mL
- Specimen Type: Respiratory Sources: Bronchoalveolar lavage, bronchial washing, tracheal secretions, or sputum Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Tissue Sources: Respiratory Container/Tube: Sterile container Specimen Volume: 5-10 mm Collection Instructions: 1. Submit fresh tissue. 2. Keep tissue moist with sterile water or sterile saline Acceptable Specimen Type: NALC/NaOH-digested respiratory specimens Sources: Lavage fluid, bronchial washing, respiratory fluid, sputum, or tracheal secretion Container/Tube: Sterile container Specimen Volume: 2 mL Collection Instructions: 1. Submit digested specimen treated with NALC/NaOH. 2. Clearly indicate on container and order form that specimen is a digested specimen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 86317 x 12

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**Pneumocystis Smear**

**Specimen Requirements:** Specimen source is required. Submit only 1 of the following specimens: Preferred: Specimen Type: Bronchoalveolar lavage Container/Tube: Sterile container Specimen Volume: Minimum of 2 mL Specimen Type: Lung or open lung tissue Container/Tube: Sterile container Specimen Volume: Minimum of a rice size piece Collection Instructions: Tissue
should be placed in small amount of sterile saline or sterile water. Alternate: Specimen Type: Bronchial washing, sputum, or tracheal secretion Container/Tube: Sterile container Specimen Volume: Minimum of 1 mL

**Specimen Minimum Volume:** Varies
Brochoalveolar lavage: 2mL/Sputum, bronchial washings, and tracheal secretions: 1 mL/Lung tissue and open lung biopsy: rice-sized piece of tissue

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days

**CPT Code Information:** 87206; 87176-Tissue processing (if appropriate);

**PNH, PI-Linked Antigen, Blood**

**Specimen Requirements:** Specimen must arrive within 72 hours of draw. Container/Tube: Preferred: 2.6-mL Yellow top (ACD) Acceptable: 7-mL ACD or lavender top (EDTA) Specimen Volume: 2.6 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole blood Ambient (preferred) 72 hours

**CPT Code Information:** 88184-Flow cytometry, RBC x 1; 88184-Flow cytometry, WBC x 1; 88185-Flow cytometry, additional marker (each), RBC x 1; 88185-Flow cytometry, additional marker (each), WBC x 6; 88188-Flow Cytometry Interpretation, 9-15 Markers x 1;

**Podoplanin (D2-D40) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**Poliovirus (Types 1, 3) Antibodies, Neutralization**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerate in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
**FPOLE 57942**

**Pollock White (Pollachius virens) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86382 x 2; ;

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**PVJAK 65116**

**Polycythemia Vera, JAK2 V617F with Reflex to JAK2 Exon 12-15, Sequencing for Erythrocytosis**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: EDTA (Lavender) or ACD-B (yellow top) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Type: Bone marrow aspirate Container/Tube: EDTA (Lavender) or ACD-B (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as bone marrow.

**Specimen Minimum Volume:** Blood/Bone marrow: 0.5 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 5 days
- Ambient 5 days

**CPT Code Information:** 81270 JAK2 V617; 0027U (if appropriate);
Pomegranate (Punica granatum) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube, serum gel is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

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Pompe Disease Second-Tier Newborn Screening, Blood Spot

**Specimen Requirements:** Supplies: Card - Blood Spot Collection (Filter Paper) (T493)
Specimen Volume: 3 blood spots
Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry.

**Specimen Minimum Volume:** Blood Spots: 1

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 56 days
- Frozen 56 days
- Ambient 7 days

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Pompe Disease, Blood Spot

**Specimen Requirements:** Supplies: Card-Blood Spot Collection (Filter Paper) (T493)
Specimen Volume: 3 blood spots
Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. Let blood dry completely on the filter paper at ambient temperature in a horizontal position for a minimum of 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry.

**Specimen Minimum Volume:** Blood Spots: 1

**Transport Temperature:**
Pompe Disease, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1740 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated 24 hours Specimen Type: Skin biopsy Supplies: Eagle's minimum essential medium with 1% penicillin and streptomycin (T115) tubes are available upon request. Container/Tube: Sterile container with any standard cell culture media (e.g., minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Specimen Volume: 4-mm punch Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Whatman Protein Saver 903 Paper or Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81406-GAA (glucosidase, alpha; acid) (e.g., glycogen storage disease type II [Pompe disease]), full gene sequence; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

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**FPOPW**

**Poplar White (Populus alba) IgE**

**Specimen Requirements:** Draw blood in a plain, red-top tube, serum gel tube are acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

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**CPT Code Information:** 86003

**POPSD**

**82632**

**Poppy Seed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FPORG**

**57627**

**Pork IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube, serum gel tubes are acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**FPRK4**

**57564**

**Pork IgG4**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**PREGI**

**82691**

**Pork Neutral-Regular Insulin, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### Pork, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

### Porphobilinogen and Aminolevulinic Acid, Plasma

**Specimen Requirements:** Patient Preparation: Patient should abstain from alcohol for at least 24 hours prior to specimen collection. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Green top (heparin) Acceptable: Green top (lithium heparin), Lavender top (EDTA), Yellow top (ACD A or B) Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL Collection Instructions: It is recommended that specimen collection occur during the acute phase. Porphobilinogen (PBG) and aminolevulinic acid (ALA) may be normal when the patient is not exhibiting symptoms.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 21 days
- Refrigerated 7 days

**CPT Code Information:** 82542-- Porphobilinogen, P; 82135-- Aminolevulinic Acid, P;

### Porphobilinogen Deaminase (PBGD), Washed Erythrocytes

**Specimen Requirements:** All porphyrin tests on erythrocytes can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or green top (lithium heparin) Submission Container/Tube: Plastic vial Specimen Volume: Washed erythrocyte suspension Collection Instructions: Collect and process whole blood specimen as follows: 1. Immediately place specimen on
wet ice. 2. Transfer entire specimen to a 12-mL graduated centrifuge tube. 3. Centrifuge specimen for 10 minutes at 2,000 rpm. 4. Record volume of packed cells and the total volume of the specimen. 5. Discard supernatant plasma. 6. Wash packed erythrocytes 2 times by resuspension of at least an equal amount of cold 0.9% saline, mix, and centrifuge for 5 minutes at 2,000 rpm, discarding supernatant after each washing. 7. Resuspend packed cells to the original total volume with 0.9% saline. Invert specimen gently to mix.

**Specimen Minimum Volume:** 1 mL of washed and resuspended erythrocytes

**Transport Temperature:**
Washed RBC  Frozen 14 days

**CPT Code Information:** 82657

### Porphobilinogen Deaminase (PBGD), Whole Blood

**Specimen Requirements:** All porphyrin tests on whole blood can be performed on 1 draw tube. Patient Preparation: Abstinence from alcohol for at least 24 hours prior to specimen collection is essential as ethanol induces porphobilinogen deaminase (PBGD) activity, which may lead to a false-normal result. Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or green top (lithium heparin) Specimen Volume: Full tube Collection Instructions: 1. Patient should abstain from alcohol for 24 hours. 2. Immediately place specimen on wet ice.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole blood  Refrigerated 7 days

**CPT Code Information:** 82657

### Porphobilinogen, Quantitative, Random, Urine

**Specimen Requirements:** Supplies: Urine Container-Amber, 60 mL (T596) Specimen Volume: 20 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative necessary but pH must be >5.0. 3. Specimens should be frozen immediately following collection.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
Urine  Frozen (preferred)  Refrigerated 7 days

**CPT Code Information:** 84110

### Porphyrins Evaluation, Washed Erythrocytes

**Specimen Requirements:** All porphyrin tests on erythrocytes can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Dark blue top (metal free heparin) or green top (lithium heparin) Submission Container/Tube: Plastic vial Specimen Volume: Washed erythrocyte suspension Collection Instructions: Collect and process whole blood specimen as follows: 1. Immediately place specimen on wet ice. 2. Transfer entire specimen to a 12-mL graduated centrifuge tube. 3. Centrifuge specimen for 10 minutes at 2,000 rpm. 4. Record volume of packed cells and the total volume
of the specimen. 5. Discard supernatant plasma. 6. Wash packed erythrocytes 2 times by resuspension of at least an equal amount of cold 0.9% saline, mix, and centrifuge for 5 minutes at 2,000 rpm, discarding supernatant after each washing. 7. Resuspend packed cells to the original total volume with 0.9% saline. Invert specimen gently to mix. 8. Transfer to a plastic tube and freeze.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Washed RBC: Frozen (preferred) 14 days
- Refrigerated: 14 days

**CPT Code Information:** 84311-Spectrophotometry, analyte not elsewhere specified; 82542-Chromatography (if appropriate);

### Porphyrins Evaluation, Whole Blood

**Specimen Requirements:** All porphyrin tests on whole blood can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Dark blue top (metal free heparin) or green top (lithium heparin) Specimen Volume: Full tube Collection Instructions: Immediately place specimen on wet ice.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
- Whole blood: Refrigerated 7 days

**CPT Code Information:** 84311-Spectrophotometry, analyte not elsewhere specified; 82542-Chromatography (if appropriate);

### Porphyrins, Feces

**Specimen Requirements:** Container/Tube: Stool container (T291) Specimen Volume: Entire collection (48, 72, or 96 hour). 24-Hour collection is adequate if the collection volume is approximately 100 g. Collection Instructions: 1. Patient should be instructed to refrain from red meat and aspirin-containing medications for 3 days prior to, as well as during, specimen collection. Compliance should be indicated. 2. No barium, laxatives, or enemas may be used within 24 hours of starting the collection. Additional Information: 1. Length of collection period is required. 2. Specimens smaller than 100 g may not provide interpretable results. 3. Include a list of medications the patient is currently taking.

**Specimen Minimum Volume:** 10 g

**Transport Temperature:**
- Fecal: Frozen (preferred) 14 days
  - Refrigerated: 14 days

**CPT Code Information:** 84126

### Porphyrins, Quantitative, 24 Hour, Urine

**Specimen Requirements:** Patient Preparation: Patient should abstain from alcohol for 24 hours prior to, as well as during, collection. Supplies: Amber, 60-mL urine bottle (T596) Sodium Carbonate, 5
gram (T272) Specimen Volume: 20-50 mL Collection Instructions: 1. Collect a 24-hour urine specimen. 2. Add 5 g of sodium carbonate (T272) as preservative at start of collection. This preservative is intended to achieve a pH of >7. Do not substitute sodium bicarbonate for sodium carbonate. 3. The container should be refrigerated and protected from light as much as possible during collection. An aliquot should be frozen when collection is complete.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
Urine Frozen 7 days

**CPT Code Information:** 84110-Porphobilinogen, quantitative; 84120-Porphyrins, quantitation and fractionation;

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**PQNRU**

**Porphyrins, Quantitative, Random, Urine**

**Specimen Requirements:** Patient Preparation: Patient should abstain from alcohol for 24 hours prior to collection. Supplies: Urine Container - Amber, 60 mL (T596) Container/Tube: Amber, 60-mL urine bottle (T596) Specimen Volume: 20-50 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 15 mL

**Transport Temperature:**
Urine Frozen 72 hours

**CPT Code Information:** 84110-Porphobilinogen, quantitative; 84120-Porphyrins, quantitation and fractionation;

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**PTP**

**Porphyrins, Total, Plasma**

**Specimen Requirements:** Patient Preparation: Patient should abstain from alcohol for at least 24 hours prior to specimen collection. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Green top (heparin) Acceptable: Lavender top (EDTA) Submission Container/Tube: Amber vial (T192) Specimen Volume: 3 mL Collection Instructions: Centrifuge specimen and aliquot plasma into amber vial. Send plasma frozen.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma Frozen 14 days

**CPT Code Information:** 84311-Porphyrins, total; 82542-Porphyrins, fractionation (if appropriate);

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**FPOS**

**Posaconazole**

**Specimen Requirements:** Container/Tube: Agar slant or other appropriate media Specimen Volume: Organism in pure culture Complete and submit with specimen: 1. Fungus Testing Lab request form Collection Instructions: Organism must be in pure culture, actively growing. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance.

**Transport Temperature:**
Varies Ambient
**POSA 89591**

**Posaconazole, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 0.6 mL  
**Transport Temperature:**  
Serum Red Frozen (preferred) 14 days  
Refrigerated 7 days

**CPT Code Information:** 80299

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**POSV 9205**

**Post Vasectomy Check, Semen**

**Specimen Requirements:** Specimen must arrive within 24 hours of collection. Send specimen Monday through Thursday only and not the day before a holiday. If holiday falls on a Saturday, holiday will be observed on the preceding Friday. Sunday holidays are observed on the following Monday. Specimen should be collected and packaged as close to shipping time as possible. Laboratory does not perform testing on weekends. Container/Tube: Semen Analysis Kit (T178) Specimen Volume: Total ejaculate Collection Instructions: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results. Additional Information: Include the following information: semen volume and number of days of sexual abstinence.

**Specimen Minimum Volume:** NA  
**Transport Temperature:**  
Semen Ambient

**CPT Code Information:** 89321

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**PMARP 65559**

**Postmortem Arrhythmia Panel**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Specimen Stability Information: Ambient Acceptable: Specimen Type: Blood spot Container/Tube: Whatman FTA Classic Card or Whatman Protein Saver 903 Card Specimen Volume: 4-5 blood spots Collection Instructions: 1. Completely fill at least 3 circles on the filter paper card (approximately 80 microliters of blood per circle) 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Tissue: See Specimen Required Blood Spots: 3

**Transport Temperature:**  
Varies Ambient (preferred)

Frozen
Refrigerated

CPT Code Information: 81479; 81403; 81404 x 2; 81406 x 3; 81407;

**PMCMP** 65560  
**Postmortem Cardiomyopathy Panel**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block  
Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block.  
Specimen Stability Information: Ambient (preferred) Acceptable: Specimen Type: Blood spot  
Container/Tube: Whatman FTA Classic Card or Whatman Protein Saver 903 Card  
Specimen Volume: 3-5 blood spots  
Collection Instructions: 1. Completely fill at least 3 circles on the filter paper card.  
2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours.  
3. Do not expose specimen to heat or direct sunlight.  
4. Do not stack wet specimens.  
5. Keep specimen dry.  
Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Tissue: See Specimen Required Blood Spots: 3

**Transport Temperature:**  
Varies Ambient (preferred)  
Frozen  
Refrigerated

CPT Code Information: 81439

**PMMFR** 65561  
**Postmortem Marfan and Related Panel**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block  
Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block.  
Specimen Stability Information: Ambient Acceptable: Specimen Type: Blood spot  
Container/Tube: Whatman FTA Classic Card or Whatman Protein Saver 903 Card  
Specimen Volume: 3-5 blood spots  
Collection Instructions: 1. Completely fill at least 3 circles on the filter paper card.  
2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours.  
3. Do not expose specimen to heat or direct sunlight.  
4. Do not stack wet specimens.  
5. Keep specimen dry.  
Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Tissue: See Specimen Required Blood Spots: 3

**Transport Temperature:**  
Varies Ambient (preferred)  
Frozen  
Refrigerated

CPT Code Information: 81410

**PMNSR** 65562  
**Postmortem Noonan and Related Panel**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block  
Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block.  
Specimen Stability Information: Ambient Acceptable: Specimen Type: Blood spot  
Container/Tube: Whatman FTA Classic
Card or Whatman Protein Saver 903 Card Specimen Volume: 3-5 blood spots Collection Instructions: 1. Completely fill at least 3 circles on the filter paper card. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Tissue: See Specimen Required Blood Spots: 3

**Transport Temperature:**

- Varies
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479; 81404; 81311; 81405 X2; 81406 X6;

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**PMSBB 81931**

**Postmortem Screening, Bile and Blood Spots**

**Specimen Requirements:** Both bile and blood spots are required. Supplies: Card-Postmortem Screening (Filter Paper) (T525) Collection Container/Tube: Postmortem Screening Card (T525) Specimen Volume: Properly completed screening card Collection Instructions: 1. Collect blood in a heparin-containing tube and drop 25 mcL of blood onto each circle on 1 end of the special card. 2. Collect bile by direct puncture of the gallbladder and drop 25 mcL of bile onto each circle on the opposite end of the card. 3. Allow to dry at ambient temperature in a horizontal position for 3 or more hours. 4. Fill out information on page 2 of collection card. 5. Do not expose specimen to heat or direct sunlight. 6. Do not stack wet specimens. 7. Keep specimen dry.

**Specimen Minimum Volume:** Bile Spot: 1 and Blood Spot: 1

**Transport Temperature:**

- Whole blood
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 83789

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**KUR 8527**

**Potassium, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. Additional Information: 1. Specimen collected with toluene or urine collected with no preservative if kept refrigerated continuously is acceptable. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days
**KBF 8028**

**Potassium, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Indicate specimen source.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Body Fluid Refrigerated 7 days

**CPT Code Information:** 84133

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**RKUR 84475**

**Potassium, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84133

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**KCCL 81390**

**Potassium, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated 48 hours

**CPT Code Information:** 84132

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**FPTWG 57539**

**Potato White IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
FMPG
57931

**Poultry and Meat Panel IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

PPOXZ
35530

**PPOX Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens:
- Whole blood
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)
- Acceptable: Any anticoagulant
- Specimen Volume: 3 mL
- Collection Instructions:
  1. Invert several times to mix blood.
  2. Send specimen in original tube.
- Specimen Stability Information:
  - Ambient (preferred)/Refrigerated
  - Specimen Type: Cultured fibroblasts
  - Container/Tube: T-75 or T-25 flask
  - Specimen Volume: 1 Full T-75 or 2 full T-25 flasks
  - Specimen Stability Information:
  - Ambient (preferred)/Refrigerated <24 hours
  - Specimen Type: Skin biopsy
  - Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]).
  - Specimen Volume: 4-mm punch
  - Specimen Stability Information: Refrigerated (preferred)/Ambient
  - Specimen Type: Blood spot Supplies:
  - Card - Blood Spot Collection (Filter Paper) (T493)
    - Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper)
    - Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493)
    - Specimen Volume: 2 to 5 Blood spots
    - Collection Instructions:
      1. An alternative blood collection option for a patient >1 year of age is finger stick.
      2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours.
      3. Do not expose specimen to heat or direct sunlight.
      4. Do not stack wet specimens.
      5. Keep specimen dry.
  - Specimen Stability Information:
  - Ambient (preferred)/Refrigerated
  - Additional Information:
    1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.
    2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:**
- Blood: 1 mL
- Blood Spots: 3

**Transport Temperature:**
- Varies

**CPT Code Information:**
- PPOX Gene, Full Gene Analysis; 81406-PPOX;
- Fibroblast Culture for Genetic Testing; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate);
- 88240-Cryopreservation (if appropriate);
Prader-Willi/Angelman Syndrome, Molecular Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 1 mL Amniotic Fluid: 10 mL

**Transport Temperature:** Varies

**CPT Code Information:** 81331-SNRPN/UBE3A, (small nuclear ribonucleoprotein polypeptide Nand ubiquitin protein ligase E3A) (eg, Prader-Willi syndrome and/or Angelman syndrome), methylation analysis; ; Amniotic Fluid Culture/Genetic Test; ; 88235-Tissue culture for amniotic fluid (if appropriate); ; 88240-Cryopreservation (if appropriate); Maternal Cell Contamination, B; ; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

Prealbumin (PAB), Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Additional Information: This is an immunologic protein measurement. For thyroxine-binding measurement of prealbumin, see TBPE / Thyroxine-Binding Protein Electrophoresis, Serum.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** Serum Refrigerated (preferred) 14 days

Ambient 14 days

Frozen 14 days

**CPT Code Information:** 84134

Pregabalin, Serum

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw specimen immediately before next scheduled dose. 2. Spin down within 2 hours of draw and move serum to plastic vial.

**Specimen Minimum Volume:** 0.5 mL
**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80366; G0480; 17PRN 88646

**Pregnenolone and 17-Hydroxypregnenolone**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen 28 days

**CPT Code Information:** 84140-Pregnenolone; 84143-17-Hydroxyprogrenolone;

**Pregnenolone, Serum**

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen 28 days

**CPT Code Information:** 84140

**Prenatal Aneuploidy Detection, FISH**

**Specimen Requirements:**
- Submit only 1 of the following specimens:
  - Refrigerate/Ambient Mailer, 5 lb (T329) Container/Tube: Amniotic fluid
  - Amniotic fluid container
  - Specimen Volume: 20-25 mL
- Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. 3. Place the tubes in a Refrigerate/Ambient Mailer, 5 lb (T329). 4. Fill remaining space with packing material. Additional Information: 1. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 2. Bloody specimens are undesirable. 3. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 4. Results will be reported and also telephoned or faxed, if requested. Acceptable Supplies:
  - CVS Media (RPMI)
  - Small Dish (T095)
- Container/Tube: 15-mL tube containing 15 mL of transport media
- Specimen Volume: 20-30 mg
- Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer chorionic villi to a Petri dish containing transport medium (Such as CVS Media (RPMI) and Small Dish [T095]). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua.

**Specimen Minimum Volume:**
- Amniotic Fluid: 2 mL
- Chorionic Villi: 2 mg
- If ordering in conjunction with other testing: If ordered with CHRAF: 12 mL
- with CHRCV: 12 mg
- with CMAP: 12 mg
mL or 12 mg; with CHRAF/CHRCV and CMAP: 26 mL or 26 mg

**Transport Temperature:**
Varies Refrigerated  
(preferred)  
Ambient

**CPT Code Information:** 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**PHSP**  
5566  
**Prenatal Hepatitis Evaluation**

**Specimen Requirements:** Patient Preparation: For 24 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2.5 mL Collection Instructions: Spin down and remove serum from gel within 24 hours.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum SST Frozen (preferred)  
Refrigerated 7 days  
Ambient 24 hours

**CPT Code Information:** 87340; 86707 (if appropriate); 87341 (if appropriate); 87350 (if appropriate);

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**PNZIK**  
65276  
**Prenatal Zika Virus IgM Antibody Capture MAC-ELISA, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2.5 mL

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Serum Frozen 30 days

**CPT Code Information:** 86794

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**PHEP**  
48215  
**Previous Hepatitis (Unknown Type)**

**Specimen Requirements:** Both 0.5 mL of refrigerated serum and 2.5 mL of frozen serum are preferred for this test. Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 3 mL Collection Instructions: 1. Centrifuge blood collection tube per
collection tube manufacturer's instructions. 2. Transfer 0.5 mL serum into an aliquot tube labeled as HAIGG, and ship refrigerate (required). 3. Transfer remaining 2.5 mL serum into a second aliquot tube labeled as SST Serum, and ship frozen (preferred).

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Serum  Refrigerated  5 days
- Serum SST  Frozen (preferred)  30 days
  Refrigerated  5 days

**CPT Code Information:** 86704; 86706; 86708; 86803; 87340; 87341 (if appropriate); 87522 (if appropriate);

**PRMB 37053**

**Primidone and Phenobarbital, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  7 days
  Frozen  28 days
  Ambient  72 hours

**CPT Code Information:** PRIMD-80188; PBR-80184;

**PTRE 82784**

**Privet Tree, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
  Frozen  90 days

**CPT Code Information:** 86003

**PROCG 37055**

**Procainamide and N-acetylprocainamide, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL
**Transport Temperature:**
Serum Refrigerated (preferred)  7 days
  Frozen  14 days
  Ambient  24 hours

**CPT Code Information:** PROC1-80190; NAPRO-80192;

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**PCT 83169**

**Procalcitonin, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  7 days
  Frozen  90 days

**CPT Code Information:** 84145

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**PINP 61695**

**Procollagen I Intact N-Terminal, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Frozen (preferred)  14 days
  Ambient  7 days
  Refrigerated  7 days

**CPT Code Information:** 83519

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**FPNTS 57311**

**Procollagen Type I Intact N-Terminal Propeptide**

**Specimen Requirements:** Specimen Type: Serum Collection Container/Tube: Red or SST Specimen Volume: 0.5 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial. Note: Collect all specimens at the same time of day, there is a diurnal variation of PINP and values are higher at night.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  5 days
  Frozen  60 days
  Ambient  24 hours
CPT Code Information:

POCF
35294

Products of Conception (POC) Aneuploidy Detection, FISH, Paraffin-Embedded Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue
Preferred: Tissue block Collection Instructions: Formalin-fixed, paraffin-embedded tissue block containing fetal or placental (including chorionic villi) tissue. Additional Information: A pathology report must be submitted with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Acceptor: Slides Collection Instructions: 6 consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide. Additional Information: Do not send the entire fetus.

Specimen Minimum Volume: Formalin-fixed, paraffin-embedded tissue block
Four consecutive, unstained, slides and 1 hematoxylin and eosin-stained slide.

Transport Temperature:
Tissue Ambient (preferred)
Refrigerated

CPT Code Information: 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate);

PROG
70542

Progesterone Receptor (PR) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

PGSN
8141

Progesterone, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Frozen (preferred) 180 days
- Refrigerated 72 hours
- Ambient 8 hours

CPT Code Information: 84144

PDL12

Specimen Requirements: Specimen Type: Tissue Supplies: Pathology Packaging Kit (T554)
Collection Instructions: Formalin-fixed, paraffin-embedded tissue block; or 3 unstained glass, "positively charged" slides with 4-microns formalin-fixed, paraffin-embedded tissue
Additional Information: 1. One slide will be stained with hematoxylin and eosin and returned. 2. For information on selection of PD-L1 testing, see PD-L1 Immunohistochemistry Options in Special Instructions.

Transport Temperature:
Special Ambient (preferred)
- Refrigerated

CPT Code Information: 88360

PDL1S
Programmed Death-Ligand 1 (PD-L1) (SP142), Semi-Quantitative Immunohistochemistry, Manual

Specimen Requirements: Supplies: Pathology Packaging Kit (T554) Specimen Type: Formalin-fixed, paraffin-embedded tissue block; or 3 unstained glass, "positively charged" slides with 4-microns formalin-fixed, paraffin-embedded tissue
Container/Tube: Pathology Packaging Kit (T554)
Additional Information: 1. One slide will be stained with hematoxylin and eosin and returned. 2. For information on selection of PD-L1 testing, see PD-L1 Immunohistochemistry Options in Special Instructions.

Transport Temperature:
Special Ambient (preferred)
- Refrigerated

CPT Code Information: 88360

PDL1

Specimen Requirements: Supplies: Pathology Packaging Kit (T554) Specimen Type: Formalin-fixed, paraffin-embedded tissue block; or 3 unstained glass, "positively charged" slides with 4-microns formalin-fixed, paraffin-embedded tissue
Container/Tube: Pathology Packaging Kit (T554)
Additional Information: 1. One slide will be stained with hematoxylin and eosin and returned. 2. For information on selection of PD-L1 testing, see PD-L1 Immunohistochemistry Options in Special Instructions.

Transport Temperature:
Special Ambient (preferred)
- Refrigerated

CPT Code Information: 88360
Instructions.

Transport Temperature:
Special Ambient  
(preferred)
Refrigerated

CPT Code Information: 88360

Progranulin Gene (GRN), Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient  
(preferred)
Frozen
Refrigerated

CPT Code Information: 81406 GRN (granulin) (eg, frontotemporal dementia), full gene sequence

Progressive Myoclonic Epilepsy Panel (Bill Only)

Specimen Requirements: This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81403; 81404 x 2; 81406 x 2; 81479;

Proinsulin, Plasma

Specimen Requirements: Patient Preparation: 1. Patient should be fasting for 8 hours. 2. Infants under 2 years of age should fast a maximum of 6 hours. Collection Container/Tube: Ice-cooled, lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: After draw, chill the whole blood on ice for at least 10 minutes, then spin down in a refrigerated centrifuge.

Specimen Minimum Volume: 0.25 mL

Transport Temperature:  
Plasma EDTA Frozen 90 days

CPT Code Information: 84206

Prolactin (PRL) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen
Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**PLPMA**

**Prolactin, Pituitary Macroadenoma, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.75 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 90 days
Ambient 24 hours

**CPT Code Information:** 84146

**PRL**

**Prolactin, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 90 days
Ambient 24 hours

**CPT Code Information:** 84146

**PROCT**

**Prolonged Clot Time Profile**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient should not be receiving Coumadin or heparin. If so, please note. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 5 mL in 5 plastic vials each containing 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen aliquots immediately at or below -40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back.
**Specimen Minimum Volume:** 4 mL in 4 plastic vials each containing 1 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85366-Soluble fibrin monomer; 85379-D-dimer; 85384-Fibrinogen; 85390-26-Special coagulation interpretation; 85610-PT ; 85613-DRVVT; 85670-Thrombin time; 85730-APTT; 85210-Factor II (if appropriate); 85220-Factor V (if appropriate); 85230-Factor VII (if appropriate); 85240-Factor VIII (if appropriate); 85250-Factor IX (if appropriate); 85260-Factor X (if appropriate); 85270-Factor XI (if appropriate); 85335-Factor XII (if appropriate); 85335-Bethesda titer (if appropriate); 85335-Factor VIII inhibitor screen (if appropriate); 85597-Platelet neutralization for lupus inhibitor (if appropriate); 85598-Staclot LA (if appropriate); 85611-PT mix 1:1 (if appropriate); 85613-DRVVT mix (if appropriate); 85613-DRVVT confirm (if appropriate); 85635-Reptilase time (if appropriate); 85732-APTT mix 1:1 (if appropriate);

**Prolyl Hydroxylase Domain-2 (PHD2/EGLN1) Gene Sequencing**

**Specimen Requirements:** Only orderable as part of a profile. For more information see HEMP / Hereditary Erythrocytosis Mutations.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Whole blood Refrigerated 30 days

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

**Promethazine (Phenergan)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80342

**PROMETHEUS IBD sgi Diagnostic**

**Specimen Requirements:** Requires both whole blood and serum Note: Specimens must be shipped together Blood: Collect 2 mL lavender top EDTA whole blood. Ship refrigerate. Serum: Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 2 mL of serum refrigerated.

**Specimen Minimum Volume:** Blood = 1 mL, Serum = 2 mL
Transport Temperature:
- Serum: Refrigerated (preferred) 21 days
- Frozen: 30 days
- Ambient: 4 days
- Whole Blood EDTA: Refrigerated (preferred) 21 days
- Ambient: 4 days

CPT Code Information: 82397 x 4; 83520 x 6; 86255 x 2; 81479; 86140;

FPLAC 91783
PROMETHEUS LactoTYPE
Specimen Requirements: Collect 5 mL EDTA (lavender top) whole blood. Ship refrigerate.
Specimen Minimum Volume: 3.0 mL
Transport Temperature:
- Whole Blood EDTA: Refrigerated (preferred) 30 days
- Ambient: 10 days

CPT Code Information: 81400

FPMET 91564
Prometheus Thiopurine Metabolites
Specimen Requirements: Specimen Type: Whole Blood Container/Tube: Lavender top (EDTA)
Specimen volume: 5 mL Collection Instructions: Send 5 mL whole blood in original tube refrigerated
Specimen Minimum Volume: Pediatric Minimum Volume: 3 mL
Transport Temperature:
- Whole Blood EDTA: Refrigerated (preferred) 8 days
- Ambient: 72 hours

CPT Code Information: 82542

PFN 80295
Propafenone, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 3 mL Collection Instructions: Samples should only be collected after patient has been receiving propafenone for at least 3 days. Trough concentrations should be collected just before administration of the next dose.
Specimen Minimum Volume: 1.1 mL
Transport Temperature:
- Serum Red: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

CPT Code Information: 80299
Propofol, Serum/Plasma

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 3 mL of serum refrigerate in plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top (EDTA) tube(s). (Plasma gel tube is not acceptable.) Spin down and send 3 mL of EDTA plasma refrigerate in plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
Varies Refrigerated

**CPT Code Information:** 80375; G0480 (if appropriate);

Prostaglandin D2 (PG D2), Urine

**Specimen Requirements:** Patient Preparation: Patient should not be on aspirin, indomethacin, or anti-inflammatory medications, if possible, for at least 48 hours prior to collection of specimen. Specimen must be frozen within 30 minutes of collection. Specimen Type: Urine Submission Container/Tube: Plastic, 10-mL tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect random urine (NO preservative). 3. Freeze immediately and send specimen frozen in the plastic, 10-mL urine tube (T068) Note: 24 hours urine collection is not acceptable.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Urine Frozen 180 days

**CPT Code Information:** 84150

Prostaglandin D2 (PGD2), Serum or Plasma

**Specimen Requirements:** Patient should not be on aspirin, indomethacin, or anti-inflammatory medications, if possible, for at least 48 hours prior to collection of specimen. Submit only 1 of the following specimens: Serum: Draw blood in a plain red-top tube(s). (Serum gel tube is acceptable) Spin down and send 3 mL serum frozen in a plastic vial. Plasma: Draw blood in a (lavender-top) EDTA tube(s). (Plasma gel tube is acceptable) Spin down and send 3 mL plasma frozen in a plastic vial.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Frozen 180 days

**CPT Code Information:** 84150

Prostate Health Index (phi), Serum

**Specimen Requirements:** Patient Preparation: 1. Specimens for testing should be drawn prior to prostate manipulations such as digital rectal examination (DRE), prostatic massage, transrectal
ultrasound (TRUS), and prostatic biopsy. Specimens should not be collected from patients receiving therapy with high biotin (vitamin B7) doses (i.e., >5 mg/day) until at least 8 hours following the last biotin administration. Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down within 3 hours of draw and separate serum from cells.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
Serum Red   Frozen 150 days

**CPT Code Information:** 84153

**PSAIM 70543**

**Prostate Specific Antigen (PSA) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**PROF 62665**

**Prostate Tumor, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Acceptable: Slides Slides: Three consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Tissue Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 - DNA probe, each (first probe set), Interpretation and report; 88271x2 - DNA probe, each; each additional probe set (if appropriate); 88271x1 - DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 - DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 - DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 - Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 - Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 - Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);
Prostate-Specific Antigen (PSA) Diagnostic, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: Free prostate-specific antigen (PSA) can only be added on within 12 hours of performing total PSA. Specimen must have been shipped frozen.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
- Serum Frozen (preferred) 180 days
- Refrigerated 5 days

CPT Code Information: 84153

Prostate-Specific Antigen (PSA) Screen, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.6 mL Collection Instructions: 1. Red-top tube must be centrifuged and aliquoted within 2 hours of draw time. 2. Serum gel tube must be centrifuged within 2 hours of draw time. Additional Information: Free prostate-specific antigen (PSA) can only be added to previously-submitted specimen within 12 hours of performing total PSA. Specimen must have been shipped frozen.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
- Serum Frozen (preferred) 180 days
- Refrigerated 5 days

CPT Code Information: 84153; G0103 (if appropriate);

Prostate-Specific Antigen (PSA) Ultrasensitive, Serum

Specimen Requirements: Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
- Serum Frozen (preferred) 180 days
- Refrigerated 5 days
**PSAFT**

**Prostate-Specific Antigen (PSA), Total and Free, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Spin down within 3 hours of draw and separate serum from cells. Additional Information: Free prostate-specific antigen (PSA) can only be added on within 12 hours of performing total PSA. Specimen must have been shipped frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** Serum Frozen 90 days

**CPT Code Information:** 84153-Total; 84154-Free;

**PACPI**

**Prostatic Acid Phosphatase (PACP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:** TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**PACP**

**Prostatic Acid Phosphatase (PAP), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:** Serum Refrigerated (preferred) 7 days Frozen 180 days

**CPT Code Information:** 84066

**CFX**

**Protein C Activity, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube:
Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Fasting 2. Spin down, remove plasma, and spin plasma again. 3. Freeze specimen immediately at $< \text{-}40^\circ\text{C}$, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. If the patient is being treated with Coumadin, this should be noted. Coumadin will lower protein C. 4. Heparin $> 4 \text{ U/mL}$ may interfere with this assay. 5. Lipemic specimen may be rejected. 6. Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason, we suggest ordering THRMP / Thrombophilia Profile.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85303

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**PCAG**

**Protein C Antigen, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge, remove plasma, and centrifuge plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at $-20^\circ\text{C}$ or, ideally, $< = -40^\circ\text{C}$. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85302

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**PCTR**

**Protein Catabolic Rate, 24 Hour, Urine**

**Specimen Requirements:** Only orderable as part of a profile. For more information see SAT24 / Supersaturation Profile, 24 Hour, Urine.

**Transport Temperature:**

Urine Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** Calculation only

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**SPE**

**Protein Electrophoresis**

**Specimen Requirements:** Only orderable as part of a profile. For more information see: SPEP / Electrophoresis, Protein, Serum SPISO / Protein Electrophoresis and Isotype, Serum SMOGA / Monoclonal Gammapathy Screen, Serum Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Transport Temperature:**

Current as of January 8, 2019 2:39 am CST     800-533-1710 or 507-266-5700 or mayocliniclabs.com
Protein Electrophoresis and Isotype, Serum

**Specimen Requirements:** Patient Preparation: Fasting (12 hour) preferred but not required
Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 84165

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Protein S Activity, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient must not be receiving Coumadin.
Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85306

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Protein S Antigen, Free, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 1 mL in 2 plastic vials each containing 0.5 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimens immediately at < or =-40°C, if possible. 3. Send specimens in the same shipping container. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If the patient is being treated with Coumadin, this should be noted. Coumadin will lower protein S. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85306

**Protein S Antigen, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient must not be receiving heparin or Coumadin. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 1 mL in 2 plastic vials each containing 0.5 mL Collection Instructions: 1. Centrifuge, remove plasma, and centrifuge plasma again. 2. Freeze specimens immediately at < or =-40°C, if possible. 3. Send specimens in the same shipping container. Additional Information: 1. A double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If the patient is being treated with Coumadin, this should be noted. Coumadin will lower protein S.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85306-Free; 85305-Total (if appropriate);

**Protein S Antigen, Total, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 1 mL in 2 plastic vials each containing 0.5 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimens immediately at < or =-40 degrees C, if possible. 3. Send specimens in the same shipping container. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If the patient is being treated with Coumadin, this should be noted. Coumadin will lower protein S. 3. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85305

**Protein, Total, 12 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a 12-hour urine specimen. 2. No preservative. 3. Invert well before taking 4-mL aliquot. 4. Do not overfill aliquot tube, 4 mL at most.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
**CPT Code Information**: 84156

**PTU 8261**  
**Protein, Total, 24 Hour, Urine**  
**Specimen Requirements**: Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative. 3. Invert well before taking 4-mL aliquot. 4. Do not over fill aliquot tube 4 mL at most.  
**Additional Information**: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.  
**Specimen Minimum Volume**: 1 mL  
**Transport Temperature**: Urine Refrigerated (preferred) 14 days  
- Frozen 14 days  
- Ambient 24 hours  

**CPT Code Information**: 84156

**TPBF 8420**  
**Protein, Total, Body Fluid**  
**Specimen Requirements**: Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: 1. Centrifuge to remove any cellular material. 2. Indicate specimen source.  
**Specimen Minimum Volume**: 0.5 mL  
**Transport Temperature**: Body Fluid Refrigerated 7 days  

**CPT Code Information**: 84157

**TP 8520**  
**Protein, Total, Serum**  
**Specimen Requirements**: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.  
**Specimen Minimum Volume**: 0.25 mL  
**Transport Temperature**: Serum Refrigerated (preferred) 7 days  
- Frozen 180 days  

**CPT Code Information**: 84155
Protein, Total, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 1 mL Collection Instructions: Centrifuge specimen to remove any cellular material.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 72 hours
- Frozen 180 days

**CPT Code Information:** 84157

Protein:Creatinine Ratio, Random, Urine

**Specimen Requirements:** Patient Preparation: Samples should be collected before fluorescein is given, or not collected until at least 24 hours later. Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. 3. Invert well before taking 4 mL aliquot. 4. Do not overfill aliquot tube, maximum 4 mL.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 84156; 82570;

Proteinase 3 Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 83516

Prothrombin Fragment 1+2

**Specimen Requirements:** Draw blood in a light blue-top (sodium citrate) tube(s). Spin down and send 1 mL of sodium citrate plasma frozen in plastic vial. Note: Separate specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
**CPT Code Information:** 83520

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<td>PTNT</td>
<td>Prothrombin G20210A Mutation, Blood</td>
<td>Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: EDTA or sodium citrate Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: Can be combined with other molecular coagulation tests: - MTHAC / 5,10-Methylenetetrahydrofolate Reductase A1298C, Mutation, Blood - F5DNA / Factor V Leiden (R506Q) Mutation, Blood - MTHFR / 5,10-Methylenetetrahydrofolate Reductase C677T, Mutation, Blood - MTHP / 5,10-Methylenetetrahydrofolate Reductase C677T and A1298C Mutations, Blood</td>
<td>Specimen Minimum Volume: 1 mL in a 3-mL ACD tube</td>
</tr>
<tr>
<td>PTC</td>
<td>Prothrombin Time (PT), Plasma</td>
<td>Only orderable as part of a coagulation consultation. For more information see 1 of the following: LUPPR / Lupus Anticoagulant Profile BDIAL / Bleeding Diathesis Profile THRMP / Thrombophilia Profile PROCT / Prolonged Clot Time Profile</td>
<td>Plasma Na Cit Frozen 14 days</td>
</tr>
<tr>
<td>PTMX</td>
<td>Prothrombin Time Mix 1:1</td>
<td>Only available as part of a coagulation consultation. For more information see 1 of the following: LUPPR / Lupus Anticoagulant Profile BDIAL / Bleeding Diathesis Profile THRMP / Thrombophilia Profile PROCT / Prolonged Clot Time Profile</td>
<td>Plasma Na Cit Frozen 14 days</td>
</tr>
<tr>
<td>PTTP</td>
<td>Prothrombin Time, Plasma</td>
<td>Specimen Type: Platelet-poor plasma Collection Container/Tube:</td>
<td></td>
</tr>
</tbody>
</table>
Light-blue top (3.2% sodium citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL
Collection Instructions: Spin down, remove plasma and spin plasma again Additional Information: Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen (preferred) 30 days
Ambient 24 hours

**CPT Code Information:** 85610

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**PPFWE**

**Protoporphyrins, Fractionation, Washed Erythrocytes**

**Specimen Requirements:** All porphyrin tests on erythrocytes can be performed on 1 draw tube.
Patient Preparation: Patient should abstain from alcohol for 24 hours. Collection Container/Tube:
Preferred: Green top (sodium heparin) Acceptable: Dark blue top (metal free heparin) or green top (lithium heparin) Submission Container/Tube: Plastic vial Specimen Volume: Washed erythrocyte suspension Collection Instructions: Collect and process whole blood specimen as follows: 1. Transfer entire specimen to a 12-mL graduated centrifuge tube. 2. Centrifuge specimen for 10 minutes at 2,000 rpm. 3. Record volume of packed cells and the total volume of the specimen. 4. Discard supernatant plasma. 5. Wash packed erythrocytes 2 times by resuspension of at least an equal amount of cold 0.9% saline, mix, and centrifuge for 5 minutes at 2,000 rpm, discarding supernatant after each washing. 6. Resuspend packed cells to the original total volume with 0.9% saline. Invert specimen gently to mix. 7. Transfer washed erythrocytes into a plastic vial and freeze.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Washed RBC Frozen (preferred) 14 days
Refrigerated 14 days

**CPT Code Information:** 82542

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**PPFE**

**Protoporphyrins, Fractionation, Whole Blood**

**Specimen Requirements:** All porphyrin tests on whole blood can be performed on 1 draw tube.
Patient Preparation: Patient should abstain from alcohol for 24 hours. Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Dark blue top (metal free heparin) or green top (lithium heparin) Specimen Volume: Full tube Collection Instructions: Immediately place specimen on wet ice.

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**
Whole blood Refrigerated 7 days

**CPT Code Information:** 82542

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**PROTR**

**Protriptyline (Vivactyl)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a
green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

**CPT Code Information:** 80335

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**PRSS1 Gene, Full Gene Analysis**  
**PRSSZ 35532**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood  
Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)  
Acceptable: Any anticoagulant  
Specimen Volume: 3 mL  
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.  
Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
  - Frozen
  - Refrigerated

**CPT Code Information:** 81404-PRSS1 (protease, serine, 1 [trypsin 1]) (eg, hereditary pancreatitis), full gene sequence

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**Pseudocholinesterase, Dibucaine Inhibition, Serum**  
**CHED 8767**

**Specimen Requirements:** Patient Preparation: For cases of prolonged apnea following surgery, wait 24 hours before obtaining specimen. Container/Tube: Preferred: Serum gel  
Acceptable: Red top  
Specimen Volume: 1 mL  
Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 7 days

**CPT Code Information:** 82480-Pseudocholinesterase, total; 82638-Pseudocholinesterase, dibucaine inhibition;

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**Pseudocholinesterase, Total, Serum**  
**PCHES 8518**

Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com  
Page 956
**Specimen Requirements**: Patient Preparation: For cases of prolonged apnea following surgery, wait 24 hours before obtaining specimen. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume**: 0.25 mL

**Transport Temperature**:
- Serum Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information**: 82480

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**Psychosine, Blood**

**Specimen Requirements**: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Green top (sodium heparin) Specimen Volume: 2 mL

**Specimen Minimum Volume**: 0.5 mL

**Transport Temperature**:
- Whole blood Refrigerated (preferred) 7 days
- Ambient 7 days

**CPT Code Information**: 82542

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**Psychosine, Blood Spot**

**Specimen Requirements**: Supplies: Card-Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Card-Blood Spot Collection (Filter Paper) (T493) Acceptable: Ahlstrom 226 filter paper, Munktell filter paper, Whatman protein Saver 903 paper, or blood collected in tubes containing heparin or EDTA and dried on filter paper Specimen Volume: 2 blood spots Collection Instructions: 1. Completely fill at least 2 circles on the filter paper card (approximately 100 microliters blood per circle). 2. Let blood dry on filter paper at room temperature in a horizontal position for 3 or more hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume**: 1 blood spot

**Transport Temperature**:
- Whole blood Ambient (preferred) 96 days
- Frozen 96 days
- Refrigerated 96 days

**CPT Code Information**: 82542

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**PTEN Gene, Full Gene Analysis**

**Specimen Requirements**: Patient Preparation: A previous bone marrow transplant from an
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81321-PTEN (phosphatase and tensin homolog) (eg. Cowden syndrome, PTEN hamartoma tumor syndrome gene analysis; full gene analysis; ; Additional Tests: Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

**FPTH**

**FPTH**

**FPTH Accuratio Comprehensive Profile**

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s). Spin down and send 2 mL EDTA plasma frozen in a plastic vial. Note: Processing of samples should be completed within one hour of blood collection

**Transport Temperature:**
- Plasma EDTA Frozen

**CPT Code Information:** 83970x2

**FPTH**

**FPTH Antibody**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred) 28 days
  - Ambient 14 days
  - Refrigerated 14 days

**CPT Code Information:** 83519

**PU1**

**PU1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
**Transport Temperature:**
TECHONLY
Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**PUSE 82362 Pumpkin Seed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**PUPYP 65151 Purines and Pyrimidines Panel, Plasma**

**Specimen Requirements:** Collection Container/Tube: Purple/Lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge at 4°C and aliquot plasma. Send plasma frozen.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Plasma Frozen 90 days

**CPT Code Information:** 82542

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**PUPYU 41977 Purines and Pyrimidines Panel, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Container/Tube: Plastic, 10-mL urine tube Specimen Volume: 3 mL Collection Instructions: Collect a random urine specimen.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Urine Frozen 90 days

**CPT Code Information:** 82542

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**FPYRE 57540 Pyrethrum IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

**Pyridostigmine, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and freeze immediately. Send 5 mL of serum frozen in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in a lavender-top tube(s) or a green-top tube(s). (Plasma gel tube is not acceptable.) Spin down and freeze immediately. Send 5 mL of EDTA or heparinized plasma frozen in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 2.2 mL

**Transport Temperature:**
- Varies
- Frozen 21 days

**CPT Code Information:** 80375

**Pyridoxal 5-phosphate (CSF)**

**Specimen Requirements:** Medical Neurogenetics collection kit (MML Supply T657) required. NOTE: One set of tubes is required per patient. Total CSF volume required is 4.5 milliliters Each collection kit contains 5 micro centrifuge tubes. Tube #3 contains antioxidants necessary to perform this test. COLLECTION PROTOCOL: CSF should be collected from the first drop into the tubes in the numbered order. 1) Fill each tube to the marked line with the required volumes. Tube 1: 0.5 mL Tube 2: 1.0 mL Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity) Tube 4: 1.0 mL Tube 5: 1.0 mL - If sample's are blood contaminated, the tubes should be placed on dry ice at bedside - If sample's are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen - Store samples at -80 until they can be shipped 2) Complete Medical Neurogenetics, LLC request form. Include test required, sample date and date of birth. 3) Label tubes with patient name and ID number, leaving the tube number viewable. 4) Place samples inside a specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag. 5) Ship samples frozen on dry ice.

**Transport Temperature:**
- CSF Frozen

**CPT Code Information:** 82542

**Pyridoxal 5-Phosphate (PLP), Plasma**

**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours) (infants-draw prior to next feeding). 2. Patient must not ingest vitamin supplements for 24 hours before the specimen is
drawn. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Green top (sodium or lithium heparin) Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL Collection Instructions: Centrifuge at 4°C, then aliquot all plasma into amber vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Heparin Refrigerated (preferred) 7 days
- Frozen 14 days

**CPT Code Information:** 84207

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**B6PA**

**Pyridoxic Acid (PA), Plasma**

**Specimen Requirements:** Only orderable as part of a profile. For more information see B6PRO / Vitamin B₆ Profile (PLP and PA), Plasma.

**Specimen Minimum Volume:** 0.25mL

**Transport Temperature:**
- Plasma Heparin Refrigerated (preferred) 7 days
- Frozen 14 days

**CPT Code Information:** 82542

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**P5NT**

**Pyrimidine 5' Nucleotidase, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Lavender top (EDTA) Specimen Volume: 5 mL

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:** Whole Blood ACD-B Refrigerated 20 days

**CPT Code Information:** 83915

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**PDHC**

**Pyruvate Dehydrogenase Complex (PDHC), Fibroblasts**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient

**Transport Temperature:** Tissue Varies

**CPT Code Information:** 84311-PDHC; 88233-Fibroblast culture; 88240-Cryopreservation for
biochemical studies;

PKLRG
64564

Pyruvate Kinase Liver and Red Blood Cell (PKLR) Full Gene Sequencing and Large Deletion Detection

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Yellow top (ACD solution B) or Purple top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Refrigerated Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 microliters Collection Instructions: 1. The preferred volume is 100 microliters at a concentration of 250 ng/mcL 2. Include concentration and volume on tube Specimen Stability Information: Frozen preferred; Ambient/refrigerate acceptable

Specimen Minimum Volume: Whole blood: 0.5 mL

Transport Temperature:
Varies Varies

CPT Code Information: 81405-PKLR

PK
8659

Pyruvate Kinase, Erythrocytes

Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: EDTA Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood ACD-B Refrigerated 20 days

CPT Code Information: 84220

PYRC
83356

Pyruvate, Spinal Fluid

Specimen Requirements: Container/Tube: Sterile vial Specimen Volume: 0.6 mL Collection Instructions: Send specimen from vial 2.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
CSF Frozen (preferred) 7 days
Ambient 7 days
Refrigerated 7 days

CPT Code Information: 84210

PYR
8657

Pyruvic Acid, Blood

Specimen Requirements: Call 800-533-1710 or 507-266-5700 to order special collection tube. Patient Preparation: Fasting (at least 4 hours) Supplies: Perchloric Acid–Pyruvate Tube (T012) Container/Tube: Special collection tube containing 2.5 mL of 6% perchloric acid (T012) Specimen
Volume: Exactly 1 mL Collection Instructions: 1. Special collection tube must be prechilled prior to draw. 2. Draw enough blood directly into syringe to add exactly 1 mL of blood to the prechilled special collection tube. 3. Once drawn, immediately transfer blood to the prechilled, special collection tube and shake vigorously to mix. Additional Information: 1. Check expiration date before using. Supplied collection tube expires 12 months after preparation. 2. If perchloric acid spills, obtain new, prechilled tube.

**Specimen Minimum Volume:** 1 mL blood added to special collection tube

**Transport Temperature:**
Whole blood Refrigerated 15 days

**CPT Code Information:** 84210

**QFP 83149**

**Q Fever Antibody, IgG and IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 7 days

**CPT Code Information:** 86638 x 4

**QUAD1 113145**

**Quad Screen (Second Trimester) Maternal, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. Do not draw specimen after amniocentesis, as this could affect results. 2. Centrifuge Immediately Additional Information: 1. For an assessment that includes neural tube defect results, gestational age must be between 15 weeks, 0 days and 22 weeks, 6 days. 2. Assessments for trisomy 21 (Down syndrome) and trisomy 18 (Edwards syndrome) only are available between 14 weeks, 0 days and 22 weeks, 6 days. 3. Initial or repeat testing is determined in the laboratory at the time of report and will be reported accordingly. To be considered a repeat test for the patient, the testing must be within the same pregnancy and trimester, with interpretable results for the same tests, and both tests are performed at Mayo Clinic. 4. Patient education brochure (T522) is available upon request.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 90 days

**CPT Code Information:** 81511

**QFT4 113563**

**QuantiFERON-TB Gold Plus, Blood**

**Specimen Requirements:** Supplies: -Standard Altitude: QuantiFERON-TB Gold Plus Collection Kit (T794) -High Altitude: QuantiFERON-TB Gold Plus High Altitude Collection Kit (T795)
Collection Instructions: 1. Special collection, incubation, and centrifugation procedures must be followed. 2. For blood collection options (1-tube collection or 4-tube collection) and specimen transport instructions, see Mycobacterium tuberculosis Infection Determination by QTB Gold Plus Collection and Processing Instructions (T688); available in Special Instructions.

**Specimen Minimum Volume:** 4 mL: 1 mL per tube (4 tubes)

**Transport Temperature:**
Whole blood Refrigerated 28 days

**CPT Code Information:** 86480

### TBBS 9336

**Quantitative Lymphocyte Subsets: T, B, and Natural Killer (NK)**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: 4 mL Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient 52 hours

**CPT Code Information:** 86355-B cells, total count; 86357-Natural killer (NK) cells, total count; 86359-T cells, total count; 86360-Absolute CD4/CD8 count with ratio;

### QPALM 82863

**Queen Palm, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

### FQUET 91727

**Quetiapine (Seroquel)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 72 hours

CPT Code Information: 80342

**QUIND 37060**

**Quinidine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 28 days
- Ambient 14 days

CPT Code Information: 80194

**FQUIN 57922**

**Quinoa (Chenopodium quinoa) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

CPT Code Information: 86003

**REPII 82782**

**Rabbit Epithelium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**RAMB 82860**

**Rabbit Meat, IgE**
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Rabbits Serum Proteins, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Rabbit Urine Proteins, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Rabies Antibody Endpoint

Specimen Requirements: Specimen Type: Serum Container/Tube: Red Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s), Spin down and send 2 mL of serum refrigerated in a plastic vial. Note: 1. Serum gel tube is acceptable, but must be poured off into plastic vial. 2. Collection date is required.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 60 days

CPT Code Information: 86382

FRAD
57933
Radish (Raphanus sativus) IgE
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

FRAJI
57860
Raji Cell Immune Complex Assay
Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Frozen 30 days

CPT Code Information: 86332

RASE
82366
Rape Seed, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

RWEED
82616
Rape Weed, IgE
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**MAL 9240**

**Rapid Malaria/Babesia Smear**

**Specimen Requirements:** Both blood and slides are required. Specimen Type: Blood Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL Collection Instructions: 1. Invert several times to mix blood. 2. Do not transfer blood to other containers. Send specimen in original tube. Specimen Type: Blood films Slides: 2 thin blood films and 2 thick blood films Container/Tube: Plastic slide container Collection Instructions: 1. Slides must be clean and grease-free. 2. Blood films should be made from fresh blood using fingerstick or drops of blood from needle following venipuncture. However, EDTA anticoagulated blood is also acceptable. 3. Prepare thin blood films as follows: a. Prepare 2 thin smears with the mini prep-slide machine. OR b. Prepare a thin film with a "feathered edge," which is no more than a single cell thick. c. Allow the film to thoroughly air dry and then fix by briefly immersing in either absolute or 95% methyl alcohol. d. Allow to air dry after fixation. 4. Prepare thick blood films as follows: a. Place a large drop of blood (approximately the size of a dime and preferably from a fingerstick) on a slide. b. Using a corner of a second slide spread the drop in a circular motion while applying firm pressure to literally scratch the blood onto the carrier slide. This technique allows the blood to dry quickly and adhere well to the slide. Use approximately 20 circular sweeps with the second slide. The drop of blood should be about the size of a quarter when finished. c. Do not fix. Air dry thoroughly (approximately 45 minutes) before placing in transport container.

**Specimen Minimum Volume:** Blood: 0.5 mL Slides: See Specimen Required.

**Transport Temperature:**
- Varies Refrigerated (preferred)
- Ambient

**CPT Code Information:** 87207

**RPRT 9056**

**Rapid Plasma Reagin (RPR), Response to Therapy, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86592
RAS/RAF Targeted Gene Panel by Next-Generation Sequencing, Tumor

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block
Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable:
Specimen Type: Tissue Slides: 1 stained and 10 unstained Collection Instructions: Submit 1 slide
stained with hematoxylin and eosin and 10 unstained, unbaked slides with 5-micron thick sections of the
tumor tissue. Acceptable: Specimen Type: Cytology Container/Tube: Cytology slide (Direct smears or
ThinPrep) Slides: 1-2 slides (stained and coverslipped) with a minimum of 5,000 total nucleated cells
Collection Instructions: Submit 1-2 slides stained and coverslipped. Additional Information: Cytology
slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block
(preferred) or 1 slide stained with hematoxylin and eosin and 8 unstained, nonbaked slides

**Transport Temperature:**
- Varies Ambient
- Frozen (preferred)
- Refrigerated

**CPT Code Information:** RAS/RAF Targeted Gene Panel by Next Generation Sequencing, Tumor;
81210-BRAF (v-raf murine sarcoma viral oncogene homolog B1) (eg, colon cancer), gene analysis,
V600E variant; 81275-KRAS (v-Ki-ras2 Kirsten rat sarcoma viral oncogene) (eg, carcinoma) gene
analysis, variants in codons 12 and 13; 81403-HRAS (v-Ha-ras Harvey rat sarcoma viral oncogene
homolog) (eg, Costello syndrome), exon 2 sequence; 81311-NRAS (neuroblastoma RAS viral [v-ras]
oncogene homolog) (eg, colorectal carcinoma), gene analysis, variants in exon 2 (eg, codons 12 and 13)
and exon 3 (eg, codon 61); Slide Review; 88381-Microdissection, manual;

Raspberry IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

Raspberry, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

RAT
82725

Rat Epithelium, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

RTSP
82793

Rat Serum Protein, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

RTUP
82794

Rat Urine Protein, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
CPT Code Information: 86003

Recombx MaTa Autoantibody Test

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days
- Ambient 72 hours

CPT Code Information: 83520

Red Blood Cell (RBC) Enzyme Evaluation

**Specimen Requirements:** Container/Tube: Yellow top (ACD solution B) Specimen Volume: 12 mL Collection Instructions: Do not transfer blood to other containers.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:** Whole Blood ACD-B Refrigerated 8 days

CPT Code Information: 82955-G-6-PD; 84087-Glucose phosphate isomerase; 84220-Pyruvate kinase; 82657-Hexokinase; 82978-Glutathione (if appropriate); 83915-RBC Enzymes (if appropriate);

Red Blood Cell Enzyme Sequencing, Varies

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Peripheral blood (preferred) Container/Tube: Preferred: Lavender top (EDTA) or Yellow top or (ACD) Acceptable: Green top (heparin) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood Specimen Stability: Refrigerated < or =30 days Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: 1. Indicate volume and concentration of the DNA. 2. Label specimen as extracted DNA and source of specimen. Specimen Stability: Frozen/Refrigerated/Ambient < or =30 days

**Specimen Minimum Volume:** Blood, Bone Marrow: 1 mL Extracted DNA: 100 mcL at 20 ng/mcL concentration

**Transport Temperature:** Varies Varies

CPT Code Information: 81350-UGT1A1 (UDP glucuronosyltransferase 1 family, polypeptide A1) (eg, irinotecan metabolism), gene analysis, common variants (eg, *28, *36, *37); 81364-HBB; 81405-PKLR; 81479-AK1, ALDOA, GPI, GSR, GSS, HBD, HK1, HMOX1, NT5C3A, PGK1, TPI1, GCLC and PFKM; 81249-G6PD;
Red Blood Cell Membrane Evaluation, Blood

Specimen Requirements: A whole blood EDTA specimen, an EDTA control specimen, and 2 well-made peripheral blood smears (Wright stained or fixed in absolute methanol) are required for testing. Patient: Specimen Type: Blood Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Immediately refrigerate specimen after draw. Refrigerate at 0 to 4°C. Do not freeze. Freezing causes sample lysis, and tests will not be performed on hemolyzed specimens. 2. Send specimen in original tube. Do not aliquot. 3. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results. 4. Be sure specimen and control are stored and transported together at refrigerate temperature, carefully following proper handling and shipping instructions. Patient: Specimen Type: Slides Container/Tube: Blood smears Specimen Volume: 2 well-made peripheral blood smears Collection Instructions: Collect 2 well-made peripheral blood smears (Wright stained or fixed in absolute methanol). Normal Shipping Control: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 4 mL Collection Instructions: 1. Draw a control specimen from a normal (healthy), unrelated, nonsmoking person at the same time as the patient. 2. Label clearly on outermost label normal control. 3. Immediately refrigerate specimen after draw. Refrigerate at 0 to 4°C. Do not freeze. Freezing causes sample lysis, and tests will not be performed on hemolyzed specimens. 4. Send specimen in original tube. Do not aliquot. 5. Rubber band patient specimen and control vial together. Control must accompany the patient sample at all times to ensure the reliability of testing results.

Specimen Minimum Volume: 2 mL

Transport Temperature:
Control Refrigerated 72 hours
Whole Blood EDTA Refrigerated 72 hours
Whole Blood Slide Refrigerated

CPT Code Information: 85557-Osmotic fragility; 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker x 1; 85060-Morphology review;

Red Blood Cell Membrane Sequencing, Varies

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Peripheral blood (Preferred) Container/Tube: Preferred: Lavender top (EDTA) or Yellow top (ACD) Acceptable: Green top (heparin) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label specimen as blood. Specimen Stability: Refrigerated < or =30 days Specimen Type: Extracted DNA Container/Tube: 1.5- to 2-mL tube Specimen Volume: Entire specimen Collection Instructions: 1. Indicate volume and concentration of the DNA. 2. Label specimen as extracted DNA and source of specimen. Specimen Stability: Frozen/Refrigerated/Ambient < or =30 days

Specimen Minimum Volume: Blood: 1 mL/Extracted DNA: 100 mcL at 20 ng/mcL concentration

Transport Temperature:
Varies Varies

CPT Code Information: 81350-UGT1A1 (UDP glucuronosyltransferase 1 family, polypeptide A1) (eg, irinotecan metabolism), gene analysis, common variants (eg, *28, *36, *37); 81404-Molecular pathology procedure, Level 5 (eg, analysis of 2-5 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 6-10 exons, or characterization of a dynamic mutation disorder/triplet repeat by Southern blot analysis); 81405-Molecular pathology procedure, Level 6 (eg, analysis of 6-10 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 11-25 exons, regionally targeted cytogenomic array analysis); 81479-Unlisted molecular pathology procedure;
Red Currant, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Red Snapper (Lutjanus spp) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003

Red Sorrel, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Red Top, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Reducing Substance, Feces
Specimen Requirements: Supplies: Stool container, small (Random), 4 oz (T288) Container/Tube: Stool container (T288) Specimen Volume: 3 g Collection Instructions: 1. Collect a loose, random stool specimen. 2. Freeze immediately. Additional Information: If additional tests are ordered, aliquot and separate sample prior to freezing to allow 1 container per test.

Specimen Minimum Volume: 2 g

Transport Temperature:
Fecal Frozen 7 days

CPT Code Information: 84376

Relative B-Cell Subset Analysis Percentage
Specimen Requirements: For serial monitoring, we recommend that specimen draws be performed at the same time of day. Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: < or = 14 years: 4 mL > 14 years: 10 mL Collection Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Label specimen as blood for RBCS / Relative B Cell Subset Analysis Percentage.

Specimen Minimum Volume: < or =14 years: 3 mL; >14 years: 5 mL

Transport Temperature:
Whole Blood EDTA Refrigerated 48 hours

CPT Code Information: 88184; 88185 x 7;

Renal Cell Carcinoma, 6p21.1 (TFEB) Rearrangement, FISH, Tissue
Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Specimen Volume: 4 Consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

Specimen Minimum Volume: Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

Transport Temperature:
Tissue Ambient (preferred)
CPT Code Information: 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271 x 1-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

RFAMA
113634
Renal Function Panel, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated 24 hours

CPT Code Information: KS: 84132; NAS: 84295; CL: 82435; HCO3: 82374; BUN: 84520; CRTS1: 82565; CA: 82310; GLURA: 82947; ALB: 82040; PHOS: 84100;

RPCWT
70591
Renal Pathology Consultation, Wet Tissue

Specimen Requirements: Supplies: Renal Biopsy Kit (T231) Source: Kidney Specimen Volume: Entire specimen Collection Instructions: Collect specimens according to the instructions in Renal Biopsy-Procedures of Handling Tissue for Light Microscopy, Immunohistology, and Electron Microscopy in Special Instructions.

Specimen Minimum Volume: Entire Specimen

Transport Temperature:
Kidney Biopsy Ambient (preferred)
Refrigerated

CPT Code Information: 88305 (If appropriate); 88348 (If appropriate); 88313 (If appropriate); 88346 (If appropriate); 88350 (If appropriate); ;

PRA
8060
Renin Activity, Plasma

Specimen Requirements: Patient Preparation: The plasma renin activity cannot be interpreted if the patient is being treated with spironolactone (Aldactone). Spironolactone should be discontinued for 4 to 6 weeks before testing. Collection Container/Tube: Chilled, lavender top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Draw blood in a chilled syringe from a patient in a seated position; place specimen in a chilled, lavender-top (EDTA) tube; and mix. 2. Alternatively, draw blood directly in a chilled, lavender top (EDTA) tube. 3. Immediately place EDTA tube into an ice-water bath until thoroughly cooled. 4. Refrigerate specimen during centrifugation and immediately transfer plasma to plastic vial. (If a refrigerated centrifuge is unavailable, chill the centrifuge carriers. Centrifuge specimen for < or =5 minutes, then promptly

**Specimen Minimum Volume:** 1.15 mL

**Transport Temperature:**
Plasma EDTA Frozen 14 days

**CPT Code Information:** 84244

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**RPTL**

**Reptilase Time, Plasma**

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or = -40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85635

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**RPR1**

**Respiratory Profile, Region 1, North Atlantic (CT, MA, ME, NJ, NH, NY, PA, RI, VT)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.8 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.6 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 25-Each individual allergen;

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**RPR10**

**Respiratory Profile, Region 10, Southwestern Grasslands (OK, TX)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.55 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days
**CPT Code Information:** 82785-IgE; 86003 x 25-Each individual allergen;

**Respiratory Profile, Region 11, Rocky Mountain (AZ [Mt]; CO; ID [Mt]; NM, UT [Mt]; WY)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 24-Each individual allergen;

**Respiratory Profile, Region 12, Arid Southwest (Southern AZ Desert, Southern CA Desert)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 22-Each individual allergen;

**Respiratory Profile, Region 13, Southern Coastal California**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 24-Each individual allergen;

**Respiratory Profile, Region 14, Central California**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.5 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 23-Each individual allergen;

**Respiratory Profile, Region 15, Intermountain West (Southern ID, NV)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 22-Each individual allergen;

**Respiratory Profile, Region 16, Inland Northwest (OR, Central and Eastern WA)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 21-Each individual allergen;

**Respiratory Profile, Region 17, Pacific Northwest (Northwestern CA, Western OR, WA)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 23-Each individual allergen;
Respiratory Profile, Region 18, Alaska

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.3 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 15-Each individual allergen;

Respiratory Profile, Region 19, Puerto Rico

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 21-Each individual allergen;

Respiratory Profile, Region 2, Mid-Atlantic (DC, DE, MD, NC, VA)

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 23-Each individual allergen;

Respiratory Profile, Region 3, South Atlantic (GA, N.FA, SC)

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 82785-IgE; 86003 x 23-Each individual allergen;
CPT Code Information: 82785-IgE; 86003 x 22-Each individual allergen;

**RPR4**  
**62049**  
**Respiratory Profile, Region 4, Sub-tropic Florida (Florida S. of Orlando)**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** 1.4 mL  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 14 days  
- Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 22-Each individual allergen;

**RPR5**  
**62050**  
**Respiratory Profile, Region 5, Ohio Valley (IN, KY, OH, TN, WV)**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** 1.6 mL  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 14 days  
- Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 26-Each individual allergen ;

**RPR6**  
**62051**  
**Respiratory Profile, Region 6, South Central (AL, AR, LA, MS)**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** 1.4 mL  
**Transport Temperature:**  
- Serum Refrigerated (preferred) 14 days  
- Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 22-Each individual allergen ;

**RPR7**  
**62052**  
**Respiratory Profile, Region 7, Northern Midwest (MI, MN, WI)**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.  
**Specimen Minimum Volume:** 1.5 mL  
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 23-Each individual allergen;

### RPR8
62053

**Respiratory Profile, Region 8, Central Midwest (IA, IL, MO)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.55 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 25-Each individual allergen;

### RPR9
62054

**Respiratory Profile, Region 9, Great Plains (KS, ND, NE, SD)**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.6 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 1.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 82785-IgE; 86003 x 22-Each individual allergen;

### SRSV
8301

**Respiratory Syncytial Virus (RSV) Antibodies, IgG and IgM (Separate Determinations), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

CPT Code Information: 86756 x 2

### RSVAB
601948

**Respiratory Syncytial Virus (RSV) In Situ Hybridization, Technical Component Only**
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 4 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88365-TC, Primary; 88364-TC, if additional ISH;

FRVP
75122

Respiratory Virus Profile (RVP), PCR
Specimen Requirements: Submit only one of the following: Swab: Collect 1 Nasopharyngeal (NP) swab in universal transport media, freeze. Ship frozen. Wash: Collect 0.5 mL Respiratory Wash (nasal wash, nasal aspirate, bronchoalveolar lavage (BAL)/wash. Submit in sterile container frozen.

Specimen Minimum Volume: 0.2 mL wash or one swab

Transport Temperature:
Varies Frozen (preferred) 28 days
Refrigerated 7 days

CPT Code Information: 87633

RETZ
35539

RET Proto-Oncogene, Full Gene Analysis
Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81406- RET (ret proto-oncogene) (eg, Hirschsprung disease), full gene sequence

RTA
9275

Reticulin Antibodies, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.8 mL

Specimen Minimum Volume: 0.4 mL
**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 14 days

**CPT Code Information:** 86255; 86256 (if appropriate);

**RTIC 9108**

**Reticulocytes, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 48 hours

Ambient 24 hours

**CPT Code Information:** 85045

**RB1 604028**

**Retinoblastoma Protein (Rb) Immunostain, Tech Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FREB 90331**

**Retinol Binding Protein**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial. Required: Fasting for at least 12 hours.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days

Frozen 90 days

**CPT Code Information:** 83883

**RBP24 81783**

**Retinol-Binding Protein, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL
Collection Instructions: 1. Collect urine for 24 hours. 2. No preservative. 3. Mix well before taking 5-mL aliquot. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 83883

**RRBP 84447**

**Retinol-Binding Protein, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 5 mL
Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 83883

**G101 65588**

**Rhabdomyolysis and Myopathy Panel (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81401; 81404 x 3; 81405 x 4; 81406 x 7; 81407 x 2; 81408 x 3; 81479;

**RHUT 603415**

**Rheumatoid Factor, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Ambient 14 days
  - Frozen 14 days

**CPT Code Information:** 86431

**RHNI 82856**

**Rhizopus nigricans, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
**Specimen Minimum Volume:** For one allergen: 0.3 mL; For more than one allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

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**Rhodotorula IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

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**Rhubarb (Rheum rhaponticum) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days

Frozen 365 days

Ambient 28 days

**CPT Code Information:** 86003

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**Ribavirin, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. Centrifuge and separate serum from cells or gel within 2 hours of draw. 3. Delay in removing serum may result in falsely-decreased ribavirin concentrations.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 28 days
Ambient 72 hours

CPT Code Information: 80299

**VITB2**

**Riboflavin (Vitamin B2), Plasma**

**Specimen Requirements:** Patient Preparation: Fasting-overnight (12-14 hours) (infants-draw prior to next feeding). Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Green top (sodium or lithium heparin) Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: 1. Place heparin collection tube on ice, keep covered to protect from light. 2. Centrifuge within 2 hours of collection and aliquot to amber vial. 3. Freeze aliquot immediately.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Plasma Heparin Frozen (preferred) 14 days
Refrigerated 7 days

CPT Code Information: 84252

**RIB**

**Ribosome P Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 83516

**FRICE**

**Rice IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001
**RICE**

**82709 Rice, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**ROMA2**

**46917 Risk Score, if Postmenopausal**

**Specimen Requirements:** Only orderable as part of a profile. For more information see ROMA / Ovarian Malignancy Risk Algorithm.

**Transport Temperature:**
- Serum Frozen (preferred) 84 days
  - Refrigerated 48 hours

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**ROMA1**

**46916 Risk Score, if Premenopausal**

**Specimen Requirements:** Only orderable as part of a profile. For more information see ROMA / Ovarian Malignancy Risk Algorithm.

**Transport Temperature:**
- Serum Frozen (preferred) 84 days
  - Refrigerated 48 hours

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**FRISP**

**91105 Risperidone (Risperdal) and 9-Hydroxyrisperidone**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Specimen Type: Plasma (Preferred) Container/Tube: Green-top (sodium heparin) tube(s). Specimen volume: 3 mL Collection Instructions: Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Specimen Type: Serum Container/Tube: Red-top tube, serum gel is not acceptable. Specimen volume: 3 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

Current as of January 8, 2019 2:39 am CST   800-533-1710 or 507-266-5700 or mayocliniclabs.com
Rivaroxaban, Anti-Xa, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Polypropylene vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C, or, ideally < or = -40°C. Additional Information: 1. A double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial. 3. If priority specimen, mark request form, give reason, and request a call-back.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

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RNA Polymerase III Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

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RNP Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

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ROMA Score (Ovarian Malignancy Risk Algorithm)

**Specimen Requirements:** Patient Preparation: Specimens should not be collected from patients receiving therapy with high biotin doses (ie, > 5 mg/day) until at least 8 hours following the last biotin administration. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission
Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum  Frozen (preferred)  84 days
- Refrigerated  48 hours

**CPT Code Information:** 86305-HE4, S; 86304-Cancer Ag 125 (CA 125), S;

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**Ropivacaine, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL serum refrigerate in a plastic vial. Plasma Draw blood in a lavender-top (EDTA) or pink top tube(s). (Plasma gel tube is not acceptable.) Spin down and send 1 mL plasma refrigerate in plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Varies Refrigerated (preferred)  28 days
- Frozen  240 days

**CPT Code Information:** 80375

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**Rotavirus Antigen, Feces**

**Specimen Requirements:** Supplies: Stool Collection Kit, Random (T635) Container/Tube: Preferred: Sterile stool container Acceptable: Swab Specimen Volume: 5-10 g Collection Instructions: Place specimen in a tightly sealing plastic bag.

**Specimen Minimum Volume:** 1 g

**Transport Temperature:**
- Fecal  Frozen (preferred)  7 days
- Refrigerated  72 hours

**CPT Code Information:** 87425

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**Rough Marsh Elder, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
- Frozen  90 days

**CPT Code Information:**
- MARS 82701

CPT Code Information: 86003

Rough Pigweed, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

Rubella Antibodies, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86762

Rubeola (Measles) Antibodies, IgG and IgM (Separate Determinations), Spinal Fluid

Specimen Requirements: Container/Tube: Sterile vial Specimen Volume: 0.25 mL

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
CSF Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86765 x 2

Rufinamide, Serum

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: SST Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. 2. For sustained-release formulations ONLY, draw blood a minimum of 12 hours after last dose. 3. Spin down within 2 hours of draw.

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 80299

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**RUSS**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
- Volume: 0.5 mL for each 5 allergens requested
- Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FRFYG**

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable.
- Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**RYEG**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
- Volume: 0.5 mL for each 5 allergens requested
- Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days
**CPT Code Information:** 86003

**RYE 82689**

**Rye, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**S100 70547**

**S-100 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75-x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**F100B 57349**

**S-100B Protein, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). Serum gel tube is acceptable. Allow specimen to clot at room temperature. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days
- Ambient 24 hours

**CPT Code Information:** 86316

**AASCA 83022**

**Saccharomyces cerevisiae Antibody, IgA, Serum**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86671

**GASCA**

**Saccharomyces cerevisiae Antibody, IgG, Serum**

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.50 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86671

**FSFLE**

**Safflower (Carthamus tinctorius) IgE**

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

**FSAG**

**Sage (Artemisia spp.) IgE**

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days
**Sage (Salvia officinalis) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**Salicylate, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 28 days
- Ambient 72 hours

**SALL4 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**Salmon IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

**SALM**

**Salmon, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

**SAGR**

**Salt Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003

**SARD**

**Sardine (Pilchard), IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days
FSCA6 91588  
**SCA 6 (CACNA1A) Repeat Expansion**

**Specimen Requirements:** 8 mL whole blood collected in a lavender-top (EDTA) tube(s). Send EDTA whole blood at ambient temperature. Note: Collection date is required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole Blood EDTA  Ambient (preferred)  10 days
- Refrigerated  10 days

CPT Code Information: 81178

FSCA1 91585  
**SCA1 (ATXN1) Repeat Expansion**

**Specimen Requirements:** Specimen Type: Whole Blood Container/Tube: Lavender top (EDTA) Specimen Volume: 8 mL Collection Instructions: Send 8 mL whole blood (lavender-top) EDTA tubes Note: Collection date is required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole Blood EDTA  Ambient (preferred)  10 days
- Refrigerated  10 days

CPT Code Information: 81180

FSCA3 91587  
**SCA3 (MHC/ATXN3) Repeat Expansion**

**Specimen Requirements:** Specimen Type: Whole Blood Container/Tube: Lavender top (EDTA) Specimen volume: 8 mL Collection Instructions: Send 8 mL whole blood in original tube ambient

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole Blood EDTA  Ambient (preferred)  10 days
- Refrigerated  10 days

CPT Code Information: 81184

SCLE 82716  
**Scale, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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### SCALS
#### Scallop, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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### ZW162
#### Scantibodies Clinical Laboratory

**Specimen Requirements:** Varies This is a Miscellaneous Referral Test. For specific requirements, please refer to the referred tests list under the catalog tab on the MML Website (external) or the Referral Catalog (CRM) (internal). If unable to find the correct test, request forms, or specimen requirements, contact Customer Service at 1-800-533-1710 or 6-5700. NOTE: Provide when ordering 1. Test name 2. Performing lab code 3. Specimen Type 4. Required consent and/or requisitions form including patient specific information, i.e. consent forms, clinical information, family history. Please contact Customer Service at 1-800-533-1710 or 6-5700 for required forms.

**Specimen Minimum Volume:** Varies

**Transport Temperature:**
Varies

**CPT Code Information:** Varies

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### SHUR
#### Schistosoma Exam, Urine

**Specimen Requirements:** Collection Container/Tube: Clean, plastic urine collection container Submission Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect a random urin specimen. Preferred time of collection between the hours of 12 noon and 3 p.m. but not required. 2. No preservative. Additional Information: A 24-hour urine collection is also acceptable.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
Urine Refrigerated 7 days.
Schistosoma species Antibody, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.50 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

CPT Code Information: 87210; 87015;

Scl 70 Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

CPT Code Information: 86682

SCNA4 (Myotonia) DNA Sequencing Test

**Specimen Requirements:** Draw blood in a lavender-top (EDTA) tube(s) and send 8 mL of whole blood. Ship Ambient. Note: Collection date and informed consent are required.

**Specimen Minimum Volume:** 6 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient (preferred) 10 days
- Refrigerated 10 days

CPT Code Information: 81406

SDHB Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL

Collection Instructions:
1. Invert several times to mix blood.
2. Send specimen in original tube.
Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient
(preferred)
- Frozen
- Refrigerated

CPT Code Information: 81405-SDHB (succinate dehydrogenase complex, subunit B, iron sulfur) (eg, hereditary paraganglioma), full gene sequence; 81403-SDHB duplication/deletion;

SDHB Immunostain, Technical Component Only

Specimen Requirements:
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient
(preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

SDHB, SDHC, SDHD Gene Panel

Specimen Requirements:
- Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant
- Specimen Volume: 3 mL
- Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient
(preferred)
- Frozen
- Refrigerated

CPT Code Information: 81403 x 2; 81404 x 2; 81405 x 2;

SDHC Gene, Full Gene Analysis

Specimen Requirements:
- Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant
- Specimen Volume: 3 mL
- Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.
**SDHDZ 37444**

**SDHD Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varieties Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81405-SDHC (succinate dehydrogenase complex, subunit C, integral membrane protein, 15kDa) (eg, hereditary paraganglioma-pheochromocytoma syndrome), full gene sequence; 81404-SDHC duplication/deletion;

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**SEA AFP 31770**

**Seafood Allergen Profile**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.7 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003 x 5

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**SEAS 31766**

**Seasonal Inhalants Allergen Profile**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.75 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days

CPT Code Information: 86003 x 10

Secobarbital, Serum

Specimen Requirements: Container/Tube: Red top Specimen Volume: 1.5 mL Collection Instructions: Spin down within 2 hours of draw.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

CPT Code Information: 80345; G0480 (if appropriate);

Secretin

Specimen Requirements: Container/Tube: Special tube containing G.I. preservative (MML Supply T125) Specimen Volume: 3 mL Collection Instructions: 1. Patient should fast for 10 to 12 hours prior to collection. 2. Collect 10 mL of blood in special tube. 3. Specimen should be separated immediately and plasma frozen as soon as possible. Additional Information: Antacid medications and medications that affect intestinal motility should be discontinued, if possible, for at least 48 hours prior to collection.

Specimen Minimum Volume: 1 mL

Transport Temperature:
GI Plasma Frozen 30 days

CPT Code Information: 83519

Sedative Hypnotic Panel, Urine-Forensic

Specimen Requirements: Collect 10 mL random urine without preservatives. Ship refrigerated in a plastic container.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 365 days
Ambient 72 hours

CPT Code Information: 80307
**Selenium, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: 0.8 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 84255

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**Selenium, Serum**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium, iodine, and barium are known to interfere with most metals tests. If gadolinium-, iodine, or barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (No Additive), 6 mL (T184) Metal Free Specimen Vial (T173) Collection Container/Tube: 6-mL Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 0.8 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoid transferring the cellular components of blood. Do not insert a pipette into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

**CPT Code Information:** 84255

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**Semen Analysis**

**Specimen Requirements:** Patient Preparation: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results. Supplies: Semen Analysis Kit - Dilution Media (T178) Specimen Volume: Total ejaculate Collection Instructions: 1. After collection, allow the specimen to liquefy for 1 hour. 2. Measure the volume. 3. Place the specimen into media within 1 hour.

**Specimen Minimum Volume:** Total ejaculate
Transport Temperature:
Semen Ambient

CPT Code Information: 89310

**SEMB 60556**

**Semen Analysis with Strict Morphology**

**Specimen Requirements:** Patient Preparation: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results. Supplies: Semen Analysis Kit - Dilution Media (T178) Specimen Volume: Total ejaculate Collection Instructions: 1. After collection, allow the specimen to liquefy for 1 hour. 2. Measure the volume. 3. Place the specimen into media within 1 hour.

**Specimen Minimum Volume:** A minimum count is needed. Lab will determine.

**Transport Temperature:**
Semen Ambient 36 hours

CPT Code Information: 89310-Semen Analysis; 89398-Strict Criteria Sperm Morphology; If both components performed.; 89322-Semen Analysis with Strict Morphology;

**SMFL 82858**

**Seminal Fluid, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

Frozen 90 days

CPT Code Information: 86003

**MIC 801659**

**Sensitivity, MIC (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies

CPT Code Information: 87186

**SEPTZ 35548**

**SEPT9 Gene, Mutation Screen**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

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**Sequential Maternal Screening, Part 1, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. The ultrasound and blood draw must be completed within a gestational window of 10 weeks, 0 days and 13 weeks, 6 days, which corresponds to a crown-rump length (CRL) range of 31 to 80 mm. 2. Collection tubes should be centrifuged within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 84163

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**Sequential Maternal Screening, Part 2, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: 1. Draw blood between 15 weeks, 0 days and 22 weeks, 6 days. Do not draw blood after performing amniocentesis, as that may lead to an artificially increased serum alpha-fetoprotein level and unreliable results. 2. Collection tubes should be centrifuged within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 81511; 82105 (if appropriate); 82677 (if appropriate); 84702 (if appropriate); 86336 (if appropriate);

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**Seralogic Agglut Method 1 Ident (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Varies
Serologic Agglut Method 2 Ident (Bill Only)
**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.
**Transport Temperature:**
Varies

Serologic Agglut Method 4 Ident (Bill Only)
**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.
**Transport Temperature:**
Varies

**Serotonin Receptor Genotype (HTR2A and HTR2C)**
**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood
Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit (T786: fees apply) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated
**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab
**Transport Temperature:**
Varies

Serotonin Release Assay (SRA), LMWH
**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.
**Specimen Minimum Volume:** 0.4 mL
**Transport Temperature:**
Serum Frozen 180 days
Serotonin Release Assay, Unfractionated Heparin

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red Top Acceptable: Serum gel
- Specimen Volume: 1 mL
- Collection Instructions: Draw blood in a plain red-tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Frozen 180 days

CPT Code Information: 86022

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Serotonin Release Assay, Unfractionated Heparin

**Specimen Requirements:**
- Specimen Type: Serum
- Container/Tube: Red/ SST acceptable
- Specimen Volume: 5 mL
- Collection Instruction: Draw blood in a plain, red-top tube, serum gel tube is acceptable. Spin down and remove serum from clot. Ship 5 mL of serum refrigerated in a plastic vial. Note: Date of birth required.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen

CPT Code Information: 86022

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Serotonin Transporter Genotype, Blood

**Specimen Requirements:**
- Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA)
- Specimen Volume: 3 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole Blood EDTA
  - Ambient (preferred)
  - Refrigerated

CPT Code Information: 81479 - Unlisted molecular pathology procedure

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Serotonin Transporter Genotype, Saliva

**Specimen Requirements:**
- Multiple saliva genotype tests can be performed on a single specimen after a single extraction. See Multiple Saliva Genotype Tests in Special Instructions for a list of tests that

CPT Code Information: 86022
can be ordered together. Supplies: DNA Saliva Collection Kit (T651) Container/Tube: Oragene DNA Self-Collection Kit (T651: fees apply) Specimen Volume: Full tube Collection Instructions: 1. Fill tube to line. 2. Send specimen in original container per kit instructions.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Saliva Ambient

**CPT Code Information:** 81479 - Unlisted molecular pathology procedure

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**SERU**

**Serotonin, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24-hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. 3. Refrigerate specimen during collection. 4. Patients should not eat avocados, bananas, butternuts, cantaloupe, dates, eggplant, grapefruit, hickory nuts, honeydew melon, kiwifruit, melon, nuts, pecans, pineapple, plantains, plums, tomatoes, or walnuts, which are high in serotonin for 48 hours before or during collection. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
Urine Frozen (preferred) 14 days
Refrigerated 7 days

**CPT Code Information:** 84260

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**SERWB**

**Serotonin, Blood**

**Specimen Requirements:** Supplies: Serotonin Tube (T259) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Serotonin tube (T259) containing ascorbic acid Specimen Volume: 2.5 mL Collection Instructions: 1. Immediately after the venipuncture, transfer approximately 2.5 mL of whole blood to serotonin tube and mix well (any volume of whole blood from 1.5-3 mL is acceptable). 2. Immediately freeze specimen.

**Specimen Minimum Volume:** 1.5 mL

**Transport Temperature:**
Whole Blood EDTA Frozen (preferred) 90 days
Refrigerated 24 hours

**CPT Code Information:** 84260

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**SER**

**Serotonin, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2.5 mL Collection Instructions: Spin down as soon as blood has clotted. Additional Information: Medications that may affect serotonin concentrations include lithium, monoamine oxidase inhibitors, methyldopa, morphine, and reserpine.
Specimen Minimum Volume: 1.1 mL

Transport Temperature:
Serum Frozen (preferred) 90 days
Refrigerated 24 hours

CPT Code Information: 84260

SERPZ
63128
SERPINA1 Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Refrigerated (preferred)
Ambient
Frozen

CPT Code Information: 81479

FSERT
91345
Sertraline (Zoloft) and Desmethylsertraline

Specimen Requirements: Submit only 1 of the following specimens: Plasma Specimen Type: Plasma Container/Tube: Green Top Specimen Volume: 2 mL Collection Instructions: Draw blood in a green-top (sodium heparin) tube, plasma gel tube is not acceptable. Spin down and send 2 mL of sodium heparin plasma refrigerated in a plastic vial. Serum Specimen Type: Serum Container/Tube: Red Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain, red-top tube, serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 1.2 mL

Transport Temperature:
Varies Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 72 hours

CPT Code Information: 80332

FSESG
57682
Sesame Seed IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 28 days
   Frozen 365 days
   Ambient 7 days

CPT Code Information: 86001

**SESA**

**Sesame Seed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
   Frozen 90 days

CPT Code Information: 86003

**SCDGP**

**Severe Combined Immunodeficiency (SCID) Gene Panel**

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated
**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**
Varies

**CPT Code Information:** 81408; 81405; 81406; 81404; 81479;

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**Sex Chromosome Determination, FISH, Tissue**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin (H and E)-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin (H&E) stained slide

**Transport Temperature:**
Tissue Ambient (preferred) Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**Sex Hormone-Binding Globulin (SHBG), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  60 days

**CPT Code Information:** 84270

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**Sex-Determining Region Y, Yp11.3 Deletion, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container
Specimen Volume: 20-25 mL

Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid.

Additional Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 6. Results will be reported and also telephoned or faxed, if requested. 

Specimen Type: Autopsy Container/Tube: Sterile container with sterile Hank’s balanced salt solution (T132), Ringer’s solution, or normal saline. 
Specimen Volume: 4 mL diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 

Biopsy specimens are best taken by punch biopsy to include full thickness of dermis. Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. 

Specimen Type: Chorionic villus Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20-25 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer chorionic villi to a Petri dish containing transport medium (T095). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Type: Fixed cell pellet Container/Tube: Sterile container with a 3:1 fixative (methanol:glacial acetic acid) Specimen Volume: Entire specimen 

Additional Information: Do not send entire fetus. Specimen Type: Skin biopsy Container/Tube: Sterile container with sterile Hank’s balanced salt solution (T132), Ringer’s solution, or normal saline. Specimen Type: Products of conception or stillbirth Container/Tube: Sterile container with sterile Hank’s balanced salt solution (T132), Ringer’s solution, or normal saline Specimen Volume: 4 mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 

A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis.

Specimen Minimum Volume: Amniotic Fluid: 5 mL/Autopsy, Skin Biopsy: 4 mm/Blood: 2 mL/Chorionic Villi: 5 mg/Fixed Cell Pellet: 1 pellet/Products of Conception: 1 cm(3)

Transport Temperature: 
Varies Refrigerated (preferred)
Ambient

CPT Code Information: 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88273 w/modifier 52-Chromosomal in situ hybridization, less than 10 cells (if appropriate); 88273-Chromosomal in situ hybridization, 10-30 cells (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); ; ;

SZDIA
64750

Sezary Diagnostic Flow Cytometry, Blood

Specimen Requirements: Specimen Type: Blood Collection Container/Tube: Preferred: Yellow top (ACD) Acceptable: EDTA, Heparin. Specimen Volume: 6 mL Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood.

Specimen Minimum Volume: 1 mL
Transport Temperature:
Whole blood  Ambient (preferred)  72 hours
Refrigerated  72 hours

CPT Code Information: 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker x 1; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); 88188-Flow Cytometry Interpretation, 9 to 15 markers (if appropriate); 88189-Flow Cytometry Interpretation, 16 or more markers (if appropriate);

SZMON
64749
Sezary Monitoring Flow Cytometry, Blood
Specimen Requirements: Specimen Type: Blood Collection Container/Tube: Preferred: Yellow top (ACD) Acceptable: EDTA, Heparin Specimen Volume: 6 mL Collection Instructions: 1. Do not transfer blood to other containers. 2. Label specimen as blood.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Whole blood  Ambient (preferred)  72 hours
Refrigerated  72 hours

CPT Code Information: 88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker x 1; 88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each); 88188-Flow Cytometry Interpretation, 9 to 15 markers (if appropriate); 88189-Flow Cytometry Interpretation, 16 or more markers (if appropriate);

SF1
72121
SF-1 Immunostain, Technical Component Only
Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Specimen Minimum Volume: N/A
Transport Temperature:
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

SHWL
82747
Sheep Wool, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
### STFRP 35148

**Shiga Toxin, Molecular Detection, PCR, Feces**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by shiga toxin DNA is unlikely. Submit only 1 of the following specimens: Supplies: C and S Vial (T058) Stool container, Small (Random), 4 oz Random (T288) Preferred: Specimen Type: Preserved stool Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of nonnutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S) (T058) Specimen Volume: Representative portion of stool Collection Instructions: 1. Collect fresh stool and submit in container with transport medium. 2. Place stool in preservative within 2 hours of collection. Specimen Stability Information: Ambient (preferred) <7 days/ Refrigerated <7 days/ Frozen <7 days Acceptable: Specimen Type: Unpreserved stool Container/Tube: Stool container (T288) Specimen Volume: Representative portion of stool Collection Instructions: Collect fresh stool and submit in container. Specimen Stability Information: Refrigerated (preferred) <7 days/ Frozen <7 days

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Fecal Varies 7 days

**CPT Code Information:** 86003

### SRW 82667

**Short Ragweed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 87798

### SCADZ 35544

**Short-Chain Acyl-CoA Dehydrogenase (SCAD) Deficiency, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times
to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-25 flask Specimen Volume: 2 Full flasks Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81405-ACADS (acyl-CoA dehydrogenase C-2 to C-3 short chain) (eg, short chain acyl-CoA dehydrogenase deficiency), full gene sequence

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**FSHOX**

**SHOX-DNA-DxTM**

**Specimen Requirements:** 3 mL whole blood in EDTA (lavender top tube). Yellow top (ACD) is acceptable. Ship ambient. Required: New York Clients-Informed consent is required. Please document on the request form or electronic order that a copy is on file. An Informed Consent for Genetic Testing is available in Special Instructions.

**Specimen Minimum Volume:** Adult 3 mL Peds 1 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred) 7 days Refrigerated 14 days

**CPT Code Information:** 81479

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**FSHRG**

**Shrimp IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

**CPT Code Information:** 86001
**SHRI 82677**

**Shrimp, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: 

\[(0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\]

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**STAT6 70554**

**Signal Transducer and Activator of Transcription 6 (STAT6), Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**FSIL 80771**

**Silicon, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum: Draw blood in a trace metal free, royal blue top, no additive tube(s). (Serum gel tube is not acceptable.) Promptly centrifuge and separate 2 mL into an acid washed plastic screw capped vial (MML supply number T619). Ship refrigerate. Plasma Draw blood in a royal blue top, trace metal free; EDTA tube(s). (Plasma gel tube is not acceptable.) Promptly centrifuge and separate 2 mL into an acid washed plastic screw capped vial (MML supply number T619). Ship refrigerate.

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 21 days
  - Ambient 14 days
  - Frozen 14 days

**CPT Code Information:** 84285

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**SILK 82771**

**Silk, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**BIR**

**Silver Birch, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**FSINS**

**Sinemet, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum frozen in a preservative-free plastic vial. Specimen must be frozen immediately or results will be compromised.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Frozen 6 days

**CPT Code Information:** 80375

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**SIIRO**

**Sirolimus, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Draw blood immediately before a scheduled dose. 2. Do not centrifuge. 3. Send specimen in original tube. Additional Information: Therapeutic range applies to trough specimen drawn immediately prior to a.m. dose.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 28 days
- Ambient 28 days

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
Skeletal Muscle Channelopathy Panel (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 81403; 81406 x 2; 81479;

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Slide Review in Molecular Genetics (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 88381

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Sm Antibodies, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL.

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 21 days
- Frozen 21 days

**CPT Code Information:** 86235

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SMAD4 Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
**SLLF 35858**

**Small Lymphocytic Lymphoma, FISH, Tissue**

**Specimen Requirements:** Provide a reason for referral and pathology report with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Lymph node Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide. Specimen Type: Solid tumor Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin (H&E) stained-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**SLO 81595**

**Smith-Lemli-Opitz Screen, Plasma**

**Specimen Requirements:** Collection Container/Tube: Preferred: Green top (sodium or lithium heparin) Acceptable: Lavender top (EDTA), pearl white top (EDTA/gel tubes), yellow top (ACD A) or yellow top (ACD B) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge specimen and aliquot plasma. Send plasma frozen.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Plasma Frozen (preferred) 90 days

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**CPT Code Information:** 81406 SMAD4 (SMAD family member 4) (eg, hemorrhagic telangiectasia syndrome, juvenile polyposis), full gene sequence; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);
SMN1 Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Supplies: Fibroblast Biopsy Transport Media (T115) Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Specimen Type: Blood spot Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 5 Blood spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient > 1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 3 punches 3-mm diameter

**Transport Temperature:**
Varies

**CPT Code Information:** 81336; 88233 (if appropriate); 88240 (if appropriate);
Smoothelin Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred) Refrigerated

Smut Corn (Ustilago maydis) IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003

Snail, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Sodium, 24 Hour, Urine

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL urine tube (T465) Specimen Volume: 5 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 25 mL of 50% acetic acid as preservative at start of collection. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
NABF 8039  
**Sodium, Body Fluid**

**Specimen Requirements:** Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material. Additional Information: Indicate specimen source.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid: Refrigerated 14 days

**CPT Code Information:** 84300

RNAUR 84522  
**Sodium, Random, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine: Refrigerated (preferred) 14 days
  - Frozen 14 days
  - Ambient 7 days

**CPT Code Information:** 84300

NACCL 81692  
**Sodium, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 14 days
  - Ambient 14 days

**CPT Code Information:** 84295
**SOLEF**

**86310**

**Sole, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**CAPN**

**35594**

**Solid Tumor-Targeted Cancer Gene Panel by Next-Generation Sequencing**

**Specimen Requirements:** Preferred: Specimen Type: Tissue Container/Tube: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block. Acceptable: Specimen Type: Tissue Container/Tube: Slides Specimen Volume: 1 stained and 10 unstained Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained, non-baked slides with 5-micron thick sections of the tumor tissue. Acceptable: Specimen Type: Cytology Container/Tube: Cytology slide (Direct smears or ThinPrep) Specimen Volume: 1-2 slides (stained and coverslipped) with a minimum of 5,000 total nucleated cells Collection Instructions: Submit 1-2 slides stained and coverslipped. Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 8 unstained, non-baked slides with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides) and 20% tumor nuclei, 1 stained and coverslipped cytology slide with at least 5,000 total nucleated cells and at least 20% tumor cells.

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81445-Targeted genomic sequence analysis panel, solid organ neoplasm; Slide Review; 88381-Microdissection, manual;

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**SFM**

**6600**

**Soluble Fibrin Monomer**

**Specimen Requirements:** Only orderable as part of a profile. For more information see: THRMP / Thrombophilia Profile BDIAL / Bleeding Diathesis Profile, Limited PROCT / Prolonged Clot Time Profile

**Transport Temperature:**
- Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85366
Soluble Fibrin Monomer

**Specimen Requirements:** Draw 4.5 mL 3.2% Sodium Citrated whole blood. Spin down and send 1.5 mL of platelet-poor plasma frozen in plastic vial. STRICT FROZEN â€“ Separate specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Plasma Na Cit  Frozen 14 days

**CPT Code Information:** 85366

Soluble Liver Antigen (SLA) Autoantibody

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 8 days
Frozen 28 days
Ambient 48 hours

**CPT Code Information:** 83520

Soluble Transferrin Receptor (sTfR), Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquotted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Frozen (preferred) 90 days
Refrigerated 7 days
Ambient 72 hours

**CPT Code Information:** 84238

Solute Carrier Organic Anion Transporter Family Member 1B1 (SLCO1B1) Genotype, Statin

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be
ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL. Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**

Variants

**CPT Code Information:** 81328

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**Somatostatin**

**Specimen Requirements:** Specimen Type: Plasma Container/Tube: EDTA tube containing GI preservative: EDTAGI Specimen Volume: 1 mL. Collect 10 mL of blood in special tube containing G.I. Preservative (MML supply number T125). Specimen should be separated and 3 mL plasma frozen as soon as possible. Patient preparation: 1. Patient should be fasting 10 – 12 hours prior to collection. 2. Patient should not be on any medications that affect insulin secretion or intestinal motility, if possible for at least 48 hours prior to collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

GI Plasma Frozen 180 days

**CPT Code Information:** 84307

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**Somatostatin (SOMATO) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Somatostatin Receptor 2 (SSTR2), Immunostain, Technical Component Only**

Current as of January 8, 2019 2:39 am CST
**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FSOTA 91123 Sotalol (Betapace)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80375

**SOX10 70555 SOX10 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**SOX11 70556 SOX11 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
FSOYG 57551 Soybean IgG

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

FSYG4 57574 Soybean IgG4

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 7 days

**CPT Code Information:** 86001

SOY 82886 Soybean, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 90 days

**CPT Code Information:** 86003
Special Coagulation Interpretation
Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85390-26 Special Coagulation Interpretation (if appropriate)

Special Mail
Transport Temperature:
Varies

Special Red Cell Antigen Typing
Specimen Requirements: Container/Tube: 6 mL pink (EDTA) Submission Container/Tube: Original tube Collection Instructions: Send specimen in original tube.
Specimen Minimum Volume: Pediatric: 3 mL blood in 6 mL (pink) EDTA tube
Transport Temperature:
Whole Blood EDTA Refrigerated (preferred) 7 days
Ambient 72 hours

CPT Code Information: 86905-Each red cell antigen typing (if more than one ordered)

Specific Gravity, Body Fluid
Specimen Requirements: Collection Container/Tube: Sterile container Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Additional Information: Indicate specimen source. Test is appropriate for all body fluids except urine.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Body Fluid Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 84315

Specific Gravity, Urine
Specimen Requirements: Container/Tube: 16x100 mm polypropylene tube Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Keep specimen frozen.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Urine Frozen (preferred) 7 days
CPT Code Information: 81003

**SPECI 35552**

**Specimen Source Identification**

**Specimen Requirements:**
Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL

**Collection Instructions:**
1. Invert several times to mix blood.
2. Send specimen in original tube.

**Specimen Stability Information:** Ambient (preferred)/Refrigerated

**Specimen Type:** Tissue block or slide

**Collection Instructions:**
1. Submit formalin-fixed, paraffin-embedded (FFPE) tissue block (preferred) or 4 to 10 unstained sections (each 5-microns thick) plus 1 slide stained with hematoxylin and eosin.
2. The number of unstained sections required depends on the amount of tissue that can be used for analysis.
3. For very small tissue fragments, 10 sections are recommended; for large tissue fragments, 4 sections are generally sufficient.
4. If known and unknown specimens are within the same block, include labeled hematoxylin-and-eosin slide identifying the known and unknown specimens.
5. Specimen ID tests involving very small fragments of tissue, including most floaters, are performed at the discretion of the reviewing pathologist. Cases involving floaters are usually rejected due to an insufficient amount of the floater tissue.

**Specimen Minimum Volume:**
Blood: 0.5 mL Tissue: send paraffin-embedded whole tissue or 4x5 micron-thick sections plus 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Varies

**CPT Code Information:** 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells; Added as needed: 81266 each additional specimen (eg additional cord blood donor, additional fetal samples from different cultures, or additional zygosity in multiple birth pregnancies);

**SS1PO 113319**

**SpecStain Grp I, microorg, ProfOnly (Bill Only)**

**Specimen Requirements:**
This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies
(preferred)
Refrigerated

**CPT Code Information:** 88312-26

**SS3PO 113323**

**SpecStain Grp III, enzyme, ProfOnly (Bill Only)**

**Specimen Requirements:**
This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88319-26

**HCFPC 113324**
**SpecStain, frozen (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88314

**SS2PC 113320**
**SpecStain, Grp II, other (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88313

**SS2PO 113321**
**SpecStain, Grp II, other, Prof Only (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88313-26

**SS3PC 113322**
**SpecStain, Grp III, enzyme (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
Varies Ambient  
(preferred)  
Refrigerated
Spinach IgG

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

Spinach, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

Spinal Muscular Atrophy Carrier Screening by Deletion/Duplication Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection Filter paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Supplies: Fibroblast Biopsy Transport
Media (T115) Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Supplies: Muscle Biopsy Kit (T541) Specimen Type: Tissue biopsy Collection Instructions: Prepare and transport specimen per instructions in Muscle Biopsy Specimen Preparation Sheet in Special Instructions. Additional Information: Muscle Biopsy Shipping Kits (T541) are available. Specimen Volume: 10-80 mg Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** Blood: 1 mL Tissue Biopsy: 200 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81329; 88233 (if appropriate); 88240 (if appropriate);

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**SMNDX 65575**

**Spinal Muscular Atrophy Diagnostic Assay by Deletion/Duplication Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: To ensure a minimum DNA amount and concentration, the preferred blood volume must be submitted. Testing may be canceled if the specimen supplied is inadequate. Prenatal Specimens Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Submit only 1 of the following specimens: Specimen Type: Amniotic fluid Container/Tube: Preferred: Screw-capped, sterile centrifuge tubes Acceptable: T-25 flasks of confluent cultured cells Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: Preferred: 15-mL tube containing 15 mL of transport media Acceptable: T-25 flasks of confluent cultured cells Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Specimen Type: Blood spot Supplies: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Card-Blood Spot Collection Filter paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card; T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** Blood: 1 mL Amniotic Fluid: 10 mL Chorionic villi: 5 mg

**Transport Temperature:**

Varies

**CPT Code Information:** 81329; 88235 (if appropriate); 88240 (if appropriate); 88233 (if appropriate); 88240 (if appropriate); 81265 (if appropriate);
**SPNKZ 35554**

**SPINK1 Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81404-SPINK1 (serine peptidase inhibitor, Kazal type 1) (eg, hereditary pancreatitis), full gene sequence

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**SBULB 35542**

**Spinobulbar Muscular Atrophy (Kennedy Disease), Molecular Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81204-AR (androgen receptor)(eg, spinal and bulba muscular atrophy, Kennedy disease, X chromosome inactivation) gene analysis; characterization of alleles (eg, expanded size or methylation status)

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**SSP 9673**

**Sporothrix Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL Collection Instructions: Do not collect from a line.

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
- Serum Frozen 14 days

**CPT Code Information:** 86671
**Sporothrix Antibody, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86671

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**Spotted Fever Group Antibody, IgG and IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86757 x 2

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**Spruce, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Squamous Cell Carcinoma Antigen, Serum**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s) or serum gel tube(s). Allow serum to clot completely at room temperature. Spin down and send 2 mL serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Frozen (preferred) 120 days
- Refrigerated 120 days
CPT Code Information: 86316

**SQUA**

82797

**Squash, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**SQUID**

82631

**Squid, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**SSAB**

82403

**SS-A and SS-B Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86235 x 2

**SSA**

81360

**SS-A/Ro Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

**CPT Code Information:** 86235

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**SSB**

**81359**

**SS-B/La Antibodies, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 21 days

**CPT Code Information:** 86235

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**STLPC**

**83916**

**St. Louis Encephalitis Antibody Panel, IgG and IgM, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL Additional Information: This test is not available for specimens originating in New York.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86653 x 2

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**STLP**

**83154**

**St. Louis Encephalitis Antibody, IgG and IgM, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86653 x 2
**ST2S**

**ST2, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Red Frozen (preferred) 90 days
- Refrigerated 7 days
- Ambient 72 hours

**CPT Code Information:** 83006

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**FSTAB**

**Stachybotrys chartarum/atra IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**FSPII**

**Stachybotrys Panel II**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 1.0 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001/Allergen specific IgG; quantitative or semiquantitative; 86003/Allergen specific IgE; quantitative or semiquantitative; 83520/not otherwise specified;

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**STEM**

**Stemphyllium, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x 0.05 mL x...
number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**STER**

Sterols, Plasma

Specimen Requirements: Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA), pearl white top (EDTA/gel tubes), yellow top (ACD A) or yellow top (ACD B) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge specimen and aliquot plasma. Send plasma frozen.

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
Plasma Frozen (preferred) 90 days
Refrigerated 90 days

CPT Code Information: 82542

**INSEC**

Stinging Insects Allergen Profile

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.8 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003 x 5

**STKZ**

STK11 Gene, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
**FSTBG 57656**

**Strawberry IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**STBY 82676**

**Strawberry, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**SABP 86537**

**Streptococcal Antibodies Profile**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days
- Ambient 7 days

**CPT Code Information:** 86060-Antistreptolysin O, titer; 86215-Deoxyribonuclease, antibody;
**SPNC 89971**

**Streptococcus pneumoniae Antigen, Spinal Fluid**

**Specimen Requirements:** Container/Tube: Sterile vial  
Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**  
CSF Refrigerated (preferred)  14 days  
Frozen  14 days

**CPT Code Information:** 87899

**SPNEU 83150**

**Streptococcus pneumoniae Antigen, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068)  
Container/Tube: Plastic, 10-mL urine tube (T068)  
Specimen Volume: 2 mL  
Collection Instructions: 1. Collect a random urine specimen.  
2. No preservative.  
3. Excessively bloody or very turbid specimens containing protein, cells, or particulates will be cancelled as they can inhibit the function of the test.  
4. Centrifuging to remove particulates is not approved.  
5. Specimens with any dyes or unnatural color are not acceptable and will be cancelled.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**  
Urine Refrigerated (preferred)  14 days  
Frozen  14 days  
Ambient  24 hours

**CPT Code Information:** 87899

**PN23 83640**

**Streptococcus pneumoniae IgG Antibodies, 23 Serotypes, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel  
Acceptable: Red top  
Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**  
Serum Refrigerated (preferred)  21 days  
Frozen  21 days

**CPT Code Information:** 86317 x 22

**STR 8746**

**Striational (Striated Muscle) Antibodies, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top  
Acceptable: Serum gel  
Specimen Volume: 1.5 mL
Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
  Frozen 28 days
  Ambient 72 hours

CPT Code Information: 83520

**MSTC**

**80749**

**Strict Criteria Sperm Morphology for Infertility Diagnosis and Treatment, Semen**

**Specimen Requirements:** Semen specimen must arrive within 24 hours of collection. Send specimen Monday through Thursday only and not the day before a holiday. If holiday falls on a Saturday, holiday will be observed on the preceding Friday. Sunday holidays are observed on the following Monday. Specimen should be collected and packaged as close to shipping time as possible. Laboratory does not perform testing on weekends. Container/Tube: Semen Analysis Kit (T178) Collection Instructions: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results. Specimen Volume: Total ejaculate Additional Information: Specimen volume is required.

**Specimen Minimum Volume:** A minimum count is needed. Lab will determine.

**Transport Temperature:**
Semen Ambient

**CPT Code Information:** 89398

**MSTC1**

**35184**

**Strict Criteria Sperm Morphology for Infertility Diagnosis and Treatment, Semen**

**Specimen Requirements:** Patient Preparation: Patient should have 2 to 7 days of sexual abstinence at the time of semen collection for accurate results. Container/Tube: Slides Specimen Volume: 2 slides-10 microL of liquefied semen on each slide Collection Instructions: 1. If sperm concentration is <10 million/mL, centrifuge the specimen at 300 x G for 10 minutes before making slides. 2 Label 2 frosted slides in pencil with the patient's first and last name and the date of specimen collection. No adhesive labels. 3. Allow the semen to liquefy for 30 minutes. 4. Place 10 microL of liquefied semen on the label end of each slide, and evenly smear the specimen using a plain slide (this process is the same as making a blood smear). 5. Allow the smears to air dry for 15 minutes before placing both slides into 1 slide holder for shipment.

**Specimen Minimum Volume:** A minimum count is needed; lab will determine

**Transport Temperature:**
Semen Ambient

**CPT Code Information:** 89398

**STRNG**

**63866**

**Strongyloides Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen
Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Frozen 30 days

**CPT Code Information:** 86682

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**STCH 9928**

**Strychnine, Serum/Plasma**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). Serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerate in a plastic vial. Note: 1. Indicate serum on request form. 2. Label specimen appropriately (serum). Plasma Draw blood in 2 lavender-top (EDTA) or 2 green-top (heparin) tubes. Plasma gel tube is not acceptable. Spin down and send 5 mL of EDTA or heparinized plasma refrigerate in a plastic vial. Note: 1. Indicate plasma on request form. 2. Label specimen appropriately (plasma).

**Specimen Minimum Volume:** 2.2 mL

**Transport Temperature:**
- Varies Refrigerated

**CPT Code Information:** 80323

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**FSTYR 91094**

**Styrene, Occupational Exposure, Blood**

**Specimen Requirements:** Collect 2 tubes green-top (sodium heparin) whole blood. Send 20 mL sodium heparin whole blood refrigerated. Collect specimen at end of shift or prior to next shift. Tubes should be filled to prevent loss of volatile compound into headspace.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- WB Sodium Heparin Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 84600

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**SUBS 45381**

**Subseq Antib MIC (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
- Varies

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**SUAC 83635**

**Succinylacetone, Blood Spot**

**Specimen Requirements:** Supplies: Card - Blood Spot Collection (Filter Paper) (T493)
Container/Tube: Local Newborn Screening Card Specimen Volume: 2 blood spots Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen. 2. At least 1 spot should be complete, ie, unpunched. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. 6. If collection of a new specimen is necessary, let blood dry on the Blood Spot Collection Card (T493) at ambient temperature in a horizontal position for 3 hours. Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood Spot: 1

**Transport Temperature:**
- Whole blood: Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 83789

### FSUCC 57460

**Succinyladenosine, CSF**

**Specimen Requirements:** Submit 1 mL of spinal fluid (CSF) in a sterile, plastic screw-cap vial. Freeze specimen after collection and ship at frozen temperature. Note: Complete and submit with specimen. Medical Neurogenetics Neurochemistry request form with Physician name and phone number. Also include test required, sample date, date of birth, current medications and relevant history.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- CSF: Frozen

**CPT Code Information:** 82542

### FSCNE 57543

**Sugar Cane (Saccharum officinarum) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 28 days
- Frozen: 365 days
- Ambient: 28 days

**CPT Code Information:** 86003

### SBSE 82382

**Sugarbeet Seed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from
the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**SBWE**

**Sugarbeet Weed, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**SFZ**

**Sulfamethoxazole, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Serum for a peak level should be drawn 60 minutes after dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 80299

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**SULFU**

**Sulfate, 24 Hour, Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Container/Tube: Plastic, 5-mL urine tube (T465) Specimen Volume: 4 mL Collection Instructions: Collect urine for 24 hours. 2. No preservative. 3. Specimen must be kept refrigerated during and after collection. 4. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH >8 indicate bacterial contamination, and testing will be cancelled. Do not attempt to adjust pH as it will adversely affect results. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL
Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 84392

**FSUAB**

**Sulfatide Autoantibody Test**

**Specimen Requirements:** Collection Container/Tube: 5 mL Red/Serum gel tube is also acceptable. Submission Container/Tube: plastic vial Collection Instructions: Draw blood in a plain, red-top tube(s), serum gel tube is acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 21 days
Frozen 120 days
Ambient 72 hours

CPT Code Information: 83520 x2 Immunoassay, analyte, quant; not otherwise specified

**FSLFU**

**Sulfonylurea Screen, Urine**

**Specimen Requirements:** Collection Container: Plastic urine container Specimen Volume: 5 mL Collection Instructions: Collect 5 mL random urine without preservative. Ship refrigerated in a plastic container.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

CPT Code Information: 80377

**FSUNG**

**Sunflower Seed IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days
SUNFS
82813

Sunflower Seed, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86001

SUNF
82615

Sunflower, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

SAT24
36971

Supersaturation Profile, 24 Hour, Urine

Specimen Requirements: Container/Tube: Plastic, 60-mL urine bottle Specimen Volume: 35 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Add 30 mL of toluene as preservative at start of collection, or refrigerate specimen during and after collection. 3. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH >8 indicate bacterial contamination, and testing will be cancelled. Do not attempt to adjust pH as it will adversely affect results. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

Specimen Minimum Volume: 25 mL

Transport Temperature:
Urine Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 82340-Calcium; 82436-Chloride; 82507-Citrate excretion; 82570-Creatinine; 83735-Magnesium; 83935-Osmolality; 83945-Oxalate; 83986-pH; 84105-Phosphorus; 84133-Potassium; 84300-Sodium; 84392-Sulfate; 84560-Uric acid; 82140-Ammonium; 84540-Urea Nitrogen;
**SSATR 36907**

**Supersaturation Profile, Pediatric, Random, Urine**

**Specimen Requirements:** Supplies: Urine Tubes, 10 mL (T068) Aliquot Tubes, 5 mL (T465)
Container/Tube: 2 plastic, 10-mL urine tubes (T068) and 4 plastic, 5-mL urine tubes (T465)
Specimen Volume: 40 mL

Collection Instructions: 1. Collect a random urine specimen and divide the urine into 6 tubes. 2. Refrigerate specimen after collection. Specimen pH should be between 4.5 and 8 and will stay in this range if kept refrigerated. Specimens with pH over 8 indicate bacterial contamination and testing will be canceled. Do not attempt to adjust pH as it will adversely affect results.

**Specimen Minimum Volume:** 30 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:**
82310-Calcium; 82436-Chloride; 82507-Citrate excretion; 82570-Creatinine; 83735-Magnesium; 83935-Osmolality; 83945-Oxalate; 83986-pH; 84105-Phosphorus; 84133-Potassium; 84300-Sodium; 84392-Sulfate; 84560-Uric acid; 82140-Ammonium;

**SNS 82594**

**Supplemental Newborn Screen, Blood Spot**

**Specimen Requirements:** Patient must be older than 12 hours and less than 1 week of age.
Acceptable: Whatman Protein Saver 903 Paper, Ahlstrom 226 filter paper

Specimen Volume: 3 Blood spots

Collection Instructions: 1. Do not use device or capillary tube containing EDTA to collect specimen.
2. Do not expose specimen to heat or direct sunlight.
3. Do not stack wet specimens.
4. Keep specimen dry.
5. If collection of a new specimen is necessary, let blood dry on the Blood Spot Collection Card (T493) at ambient temperature in a horizontal position for 3 hours.

Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions.
2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood Spots: 1

**Transport Temperature:**
- Whole blood Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 83789

**STPPC 113335**

**Surg Path Touch Prep (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
- Ambient (preferred)
- Refrigerated
CPT Code Information: 88333

**STAPC**
113336  Surg Path Touch Prep Additional (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies Ambien
  (preferred)
- Refrigerated

CPT Code Information: 88334

**SUS**
45391  Susceptibility (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

CPT Code Information: 88334

**RSLG**
61088  Susceptibility Slow Grower (Bill Only)

**Specimen Minimum Volume:** Isolate

**Transport Temperature:**
- Varies

CPT Code Information: 87181

**STV1**
62507  Susceptibility, Mtb Complex, Broth (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies

CPT Code Information: 87188 x 3

**STVP**
83597  Susceptibility, Mtb Complex, PZA (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**
- Varies
**STV2**

**Susceptibility, Mtb Cx, 2nd Line (Bill Only)**

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**Transport Temperature:**

Varies

**CPT Code Information:** 87186

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**TBPZA**

**Susceptibility, Mycobacterium tuberculosis Complex, Pyrazinamide**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook 7H10 agar slant Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Transport Temperature:**

Varies

(preferred)

Refrigerated

**CPT Code Information:** 87188-Susceptibility, Mycobacterium tuberculosis Complex, Pyrazinamide; 87153-Mtb PZA Confirmation, pncA Sequencing (if appropriate);

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**TB2LN**

**Susceptibility, Mycobacterium tuberculosis Complex, Second Line**

**Specimen Requirements:** Specimen Type: Organism Supplies: Infectious Container, Large (T146) Container/Tube: Middlebrook 7H10 agar slant Specimen Volume: Isolate Collection Instructions: Organism must be in pure culture, actively growing.

**Transport Temperature:**

Varies

(preferred)

Refrigerated

**CPT Code Information:** 87186-Susceptibility, Mtb Cx, 2nd Line

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**SGUM**

**Sweet Gum, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**Sweet Potato, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**Sweet Vernal Grass, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

**Swordfish, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003
Synaptophysin (SYNAPTO) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred; 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Synovial Sarcoma (SS), 18q11.2 (SS18 or SYT) Rearrangement, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Transport Temperature:**
Tissue Ambient (preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 – Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 – Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

Synovial Sarcoma by Reverse Transcriptase PCR (RT-PCR)

**Specimen Requirements:** A quality specimen is essential for evaluation. Submit only tissue containing tumor cells; minimal tissue is required for evaluation. Supplies: Surgical Pathology Packaging Kit (T554) requested, but not required Preferred: Specimen Type: Formalin-fixed, paraffin-embedded (FFPE) tissue with a minimum of 10% tumor cell population Collection Instructions: Process all specimens into FFPE blocks prior to submission. Acceptable: Specimen Type: Unstained slides with a minimum of 10% tumor cell population; slides may be stained and/or scraped Slides: A minimum of ten, 4- to 5-micron thick, unstained slides are required.

**Transport Temperature:**
Synthetic Cannabinoid Metabolites Screen - Expanded, Urine

**Specimen Requirements:**
- Container/Tube: Plastic urine container
- Specimen Volume: 5 mL
- Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 2.4 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 81401-EWSR1/FLI1; 81401-EWSR1/ERG; 88381-Microdissection, manual;

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Synthetic Glucocorticoid Screen, Serum

**Specimen Requirements:**
- Collection Container/Tube: Preferred: Red top Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 14 days
- Refrigerated 7 days
- Ambient 24 hours

**CPT Code Information:** 80307; 80352-if applicable;

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Synthetic Glucocorticoid Screen, Urine

**Specimen Requirements:**
- Container/Tube: Plastic, 10-mL urine tube (T068)
- Specimen Volume: 5 mL
- Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Urine Frozen 14 days

**CPT Code Information:** 80299
**TPPA**

**61480**

**Syphilis Antibody by TP-PA, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86780

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**SYPGN**

**32184**

**Syphilis Antibody, IgG, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.75 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86780

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**SYPGR**

**34510**

**Syphilis IgG Antibody with Reflex, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 86780-Syphilis antibody; 86592-Rapid Plasma reagin (if appropriate); 86780-Syphilis Antibody by TP-PA (if appropriate); 86593-Rapid Plasma Reagin Titer (if appropriate);

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**TBNY**

**82589**

**T, B and NK Lymphocyte Quantitation, New York**

**Specimen Requirements:** Container/Tube: 4 mL Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Whole Blood EDTA Ambient 52 hours

**CPT Code Information:** 86355; 86357; 86359; 86360;
TBET 70559

T-Box Expressed in T Cells (TBET) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

TALLF 35296

T-Cell Acute Lymphoblastic Leukemia (T-ALL), FISH

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

Specimen Minimum Volume: Blood: 2 mL; Bone Marrow: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88271 x 2, 88291-DNA probe, each (first probe set), Interpretation and report; 88271 x 2-DNA probe, each; each additional probe set (if appropriate); 88271-DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271 x 2-DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271 x 3-DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

TIA1 70566

T-Cell Intracellular Antigen 1 (TIA-1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
Refrigerated
CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**TCL1A**

T-Cell Leukemia/Lymphoma Protein 1A (TCL1A) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**TLPF**

T-Cell Lymphoma, FISH, Blood or Bone Marrow

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL

**Transport Temperature:**
Varies Ambient (preferred)
Refrigerated

CPT Code Information: 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**TLYMF**

T-Cell Lymphoma, FISH, Tissue

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Lymph node Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide. Specimen Type: Solid tumor Preferred: Tissue block Collection Instructions: Submit a
formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** For each probe set ordered, 2 consecutive, unstained, 5 micron-thick sections placed on positively charged slides. Include 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 – Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**TCRGD 70562**

**T-Cell Receptor Delta Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**TREC 87959**

**T-Cell Receptor Excision Circles (TREC) Analysis, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Supplies: Ambient Mailer-Critical Specimens Only (T668) Container/Tube: Lavender top (EDTA) Specimen Volume: Adults: 10 mL Pediatrics: -Preferred volume for >1 year = 5 mL -Preferred volume for < or =1 year old = 3 mL Collection Instructions: 1. Do not draw specimen through a butterfly needle. 2. Send specimen in original tube. Do not aliquot.

**Specimen Minimum Volume:** Adults: 10 mL/Pediatrics: 1 mL

**Transport Temperature:**
- Whole Blood EDTA  Ambient 48 hours

**CPT Code Information:** 81479-Unlisted molecular pathology procedure
**T-Cell Receptor Gene Rearrangement, PCR, Blood**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 4 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Whole blood</th>
<th>Ambient (preferred)</th>
<th>7 days</th>
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<tbody>
<tr>
<td></td>
<td>Refrigerated</td>
<td>7 days</td>
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</table>

**CPT Code Information:** 81340-TCB (T cell antigen receptor, beta) (eg, leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (eg, PCR); 81342-TCG (T cell receptor, gamma) (eg, leukemia and lymphoma), gene rearrangement analysis, evaluation to detect abnormal clonal population(s);

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**T-Cell Receptor Gene Rearrangement, PCR, Bone Marrow**

**Specimen Requirements:** Container/Tube: Preferred: EDTA (lavender top) Acceptable: ACD (yellow top) Specimen Volume: 2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Bone Marrow</th>
<th>Ambient (preferred)</th>
<th>7 days</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Refrigerated</td>
<td>7 days</td>
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</tbody>
</table>

**CPT Code Information:** 81340-TCB (T cell antigen receptor, beta) (eg, leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (eg, PCR); 81342-TCG (T cell receptor, gamma) (eg, leukemia and lymphoma), gene rearrangement analysis, evaluation to detect abnormal clonal population(s);

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**T-Cell Receptor Gene Rearrangement, PCR, Varies**

**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Body fluid Container/Tube: Sterile container Specimen Volume: At least 5 mL Collection Instructions: 1. If the volume is large, pellet cells prior to sending. 2. Send less volume at ambient temperature or as a frozen cell pellet. Specimen Stability Information: Body fluid: Ambient/Refrigerated/Frozen Cell pellet: Frozen Specimen Type: Paraffin-embedded bone marrow aspirate clot Container/Tube: Paraffin block Specimen Stability Information: Ambient Specimen Type: Frozen tissue Container/Tube: Plastic container Specimen Volume: 100 mg Collection Instructions: Freeze tissue within 1 hour of collection. Specimen Stability Information: Frozen Specimen Type: Paraffin-embedded tissue Container/Tube: Paraffin block Specimen Stability Information: Ambient Specimen Type: Tissue Slides Container/Tube: Unstained tissue slides Specimen Volume: 10 slides Specimen Stability: Ambient Specimen Type: Spinal fluid Container/Tube: Sterile vial Specimen Volume: 5-10 mL Specimen Stability Information: Ambient/Refrigerated Specimen Type: Extracted DNA from blood or bone marrow Container/Tube: 1.5- to 2-mL tube with indication of volume and concentration of DNA Specimen Volume: Entire specimen Collection Instructions: Label specimen as extracted DNA from blood or bone marrow Specimen Stability Information: Refrigerated/Ambient

**Specimen Minimum Volume:** Body fluid or Spinal fluid: 1 mL Tissue: 50 mg Extracted DNA
from Blood or Bone Marrow: 50 microliters at 20 ng/mL.

Transport Temperature:
Varies
Varies

CPT Code Information: 81340-TCB (T cell antigen receptor, beta) (eg, leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (eg, PCR); 81342-TCG® (T cell receptor, gamma) (eg, leukemia and lymphoma), gene rearrangement analysis, evaluation to detect abnormal clonal population(s);

TCP
89319

T-Cell Subsets, Naive, Memory and Activated

Specimen Requirements: For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Ambient 72 hours

CPT Code Information: 86359-T cells, total count; 86361-Absolute CD4 count; 88184-Flow cytometry;

TREGS
89318

T-Cell Subsets, Regulatory (Tregs)

Specimen Requirements: For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube. Do not aliquot.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Whole Blood EDTA Ambient 72 hours

CPT Code Information: 86359-T cells, total count; 86361-Absolute CD4 count;

TLBLF
65413

T-Lymphoblastic Leukemia/Lymphoma, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Specimen Type: Slides Specimen Volume: 19 Consecutive, unstained, 5 micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide

Specimen Minimum Volume: Formalin-fixed paraffin-embedded tissue block or for each probe set ordered, 9 unstained consecutive tissue sections cut at 5 microns and placed on positively charged microscope slides. Include 1 hematoxylin and eosin (H and E) stained slide.

Transport Temperature:
Tissue Ambient (preferred) Refrigerated
FRT3 9404

**T3 (Triiodothyronine), Free, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top

**Specimen Volume:** 0.6 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

**CPT Code Information:** 84481

RT3 9405

**T3 (Triiodothyronine), Reverse, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial

**Specimen Volume:** 0.8 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 84482

T3 8613

**T3 (Triiodothyronine), Total, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial

**Specimen Volume:** 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days
FRT4D 8859

**T4 (Thyroxine), Free by Dialysis, Serum**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top
- Acceptable: Serum gel
- Submission Container/Tube: Plastic vial
- Specimen Volume: 2.6 mL

**Collection Instructions:**
1. Draw blood immediately before next scheduled dose.
2. Centrifuge and separate serum from cells or gel within 2 hours of draw.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 21 days
  - Ambient 7 days

CPT Code Information: 84480

FRT4 8725

**T4 (Thyroxine), Free, Serum**

**Specimen Requirements:**
- Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.
- Collection Container/Tube: Preferred: Serum gel
- Acceptable: Red top

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 30 days
  - Ambient 72 hours

CPT Code Information: 84439

T4FT4 36108

**T4 (Thyroxine), Total and Free**

**Specimen Requirements:**
- Container/Tube: Preferred: Serum gel
- Acceptable: Red top
- Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.625 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days
  - Ambient 72 hours

CPT Code Information: 84436-Total; 84439-Free;

T4 8724

**T4 (Thyroxine), Total Only, Serum**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 30 days

**CPT Code Information:** 84436

**TACPK 88157**

**Tacrolimus, Peak, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Do not centrifuge. 2. Send specimen in original tube. Additional Information: Therapeutic range applies to trough specimens drawn immediately prior to a.m. dose.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 14 days
Ambient 14 days
Frozen 14 days

**CPT Code Information:** 80197

**TAPEN 62594**

**Tapentadol and Metabolite, Random Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Plastic urine container Submission Container/Tube: Aliquot Tube, 5 mL (T465) Specimen Volume: 2 mL Collection Instructions: No preservative.

**Specimen Minimum Volume:** 0.1 mL
**Transport Temperature:**
Urine Refrigerated (preferred) 14 days

- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80372; G0480 (if appropriate);

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**FIOCA**

**Tapioca IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 28 days

**CPT Code Information:** 86003

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**TOPSU**

**Targeted Opioid Screen, Urine**

**Specimen Requirements:** Supplies: Plastic 5-mL tube (T465) Collection Container/Tube: Plastic urine container Submission Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 3 mL

Collection Instructions: 1. Collect a random urine specimen. 2. No preservative

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80364, G0480 (if appropriate)

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**TARR**

**Tarragon, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days
CPT Code Information: 86003

**TRAP**

Trartrate-Resistant Acid Phosphatase (TRAP) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**TAU3**

TAU 3 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**TAU4**

TAU 4 Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

**TAU1**

TAU Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable:
Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

### Tay-Sachs Disease, HEXA Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Varies Ambient
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81406

### Tay-Sachs Disease, Mutation Analysis, HEXA

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 2.6 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen

**Specimen Minimum Volume:** Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

**Transport Temperature:**
Varies

**CPT Code Information:** 81255-HEXA (hexosaminidase A, alpha polypeptide) (eg, Tay-Sachs disease) gene analysis, common variants (eg, 1278insTATC, 1421+1G->C, G269S); Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture
for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); Maternal Cell Contamination, B; 81265-Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells (if appropriate);

**TCRVB**

**TCR V-Beta Repertoire Analysis by Spectratyping, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day, if possible. Supplies: Ambient Mailer-Critical Specimens Only (T668) Specimen Type: Blood Container/Tube: Lavender top (EDTA) Specimen Volume: Adults: 10 mL Pediatrics: Preferred volume for >1 year: 3 mL -Preferred volume for < or =1 year: 1 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** Adults: 5 mL/Pediatrics: 1 mL

**Transport Temperature:** Whole Blood EDTA Ambient 48 hours

**CPT Code Information:** 81340-TRG (T cell antigen receptor, beta) (eg, leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (eg, polymerase chain reaction)

**FGTEA**

**Tea IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:** Serum Refrigerated (preferred) 28 days

- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**TEA**

**Tea, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:** Serum Refrigerated (preferred) 14 days

- Frozen 90 days

**CPT Code Information:** 86003
Teased Fiber (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

**CPT Code Information:** 88362

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Telomere Defects Gene Panel

**Specimen Requirements:** Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card-Blood Spot Collection Filter Paper (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Whatman FTA Classic paper, Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient <1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Peripheral blood mononuclear cells (PBMCs) Container/Tube: Cell pellet Collection Instructions: Send as a suspension in freezing medium or cell pellet frozen on dry ice. Specimen Stability Information: Frozen Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Supplies: Fibroblast Biopsy Transport Media (T115) Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes of culture media can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur. Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 250 ng/mcL 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Whole blood: 1 mL

**Transport Temperature:**

Varies

**CPT Code Information:** 81479

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Temazepam (Restoril), Serum

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80346; G0480 (if appropriate); ;

**TDT**

**Terminal Deoxynucleotidyl Transferase (TdT) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**TERT**

**TERT Promoter Analysis, Tumor**

**Specimen Requirements:** Preferred Specimen Type: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded tissue block Acceptable Slides: 1 stained and 10 unstained slides Collection Instructions: Submit 1 slide stained with hematoxylin and eosin and 10 unstained slides (nonbaked, charged slides preferred) with 5-micron thick sections of the tumor tissue. Specimen Type: Cytology slide (Direct smears or ThinPrep) Slides: 1-2 slides Collection Instructions: Submit 1-2 slides stained and coverslipped with at least 5,000 total nucleated cells Additional Information: Cytology slides will not be returned.

**Specimen Minimum Volume:** Formalin-fixed, paraffin-embedded tissue block (preferred) or 1 slide stained with hematoxylin and eosin and 10 unstained, non-baked slides with 5-microns thick sections of the tumor tissue with at least 6 mm(2) area of tissue (can be over multiple slides from one tissue block) and at least 20% tumor cells

**Transport Temperature:**
Varies Ambient
(preferred)
Frozen
Refrigerated

**CPT Code Information:** 81345; 88381;

**TTBS**

**Testosterone, Total and Bioavailable, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 60 days

CPT Code Information: 84403; 84410; ;

TGRP 8508
Testosterone, Total and Free, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 2.5 mL
Specimen Minimum Volume: 1 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 60 days

CPT Code Information: 84402; 84403; ;

TTST 8533
Testosterone, Total by Mass Spectrometry, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 1 mL
Specimen Minimum Volume: 0.215 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 60 days

CPT Code Information: 84403

TTFB 83686
Testosterone, Total, Bioavailable, and Free, Serum
Specimen Requirements: Container/Tube: Red top Specimen Volume: 3.5 mL
Specimen Minimum Volume: 2 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
Frozen 60 days

CPT Code Information: 84402; 84403; 84410;

TTIGS 36667
Tetanus Toxoid IgG Antibody, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.4 mL
Transport Temperature:
**TTOX**

**Tetanus Toxoid, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86317

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**FFTEN**

**Tetrahydrobiopterin and Neopterin Profile (BH4, N)**

**Specimen Requirements:** Medical Neurogenetics collection kit (MML Supply T657) required. Each collection kit contains 5 microcentrifuge tubes. COLLECTION PROTOCOL: 1) CSF should be collected from the first drop into the tubes in the numbered order. Fill each tube to the marked line with the required volumes Tube 1: 0.5 mL Tube 2: 1.0 mL Tube 3: 1.0 mL (contains antioxidants necessary to protect the sample integrity) Tube 4: 1.0 mL Tube 5: 1.0 mL - If sample's not blood contaminated, the tubes should be placed on dry ice at bedside - If sample's are blood contaminated, the tubes should immediately be centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tubes, then frozen - Store samples at -80 until they can be shipped 2) Complete Medical Neurogenetics, LLC request form. Include test required, sample date and date of birth. 3) Label tubes with patient name and ID number, leaving the tube number viewable. 4) Place samples inside a specimen transport bag and the Medical Neurogenetics, LLC request form inside the pouch of the transport bag. 5) Ship samples frozen on dry ice.

**Transport Temperature:**
CSF Frozen

**CPT Code Information:** 82542

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**THEVP**

**Thalassemia and Hemoglobinopathy Evaluation**

**Specimen Requirements:** Both blood and serum are required. Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 15 mL Collection Instructions: Send specimen in original tube. Do not aliquot. Specimen Type: Serum Container/Tube: Red top or serum gel Specimen Volume: 0.6 mL Collection Instructions: Label specimen as serum.

**Specimen Minimum Volume:** Blood: 2.5 mL; Serum: 0.5 mL

**Transport Temperature:**
Serum Refrigerated 7 days

**CPT Code Information:** 86003
**Thallium, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. Aliquot 10 mL in a plastic 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert. 4. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83018

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**Thallium, Blood**

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Container/Tube: Royal blue-top (EDTA) Vacutainer plastic trace element blood collection tube (T183) Specimen Volume: Full tube Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube. Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368381.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole blood Refrigerated (preferred) 28 days
- Ambient 28 days
- Frozen 28 days

**CPT Code Information:** 83018
Thallium/Creatinine Ratio, Random, Urine

**Specimen Requirements:** Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert Submission Container/Tube: Plastic, 10-mL urine tube (T068) or a clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 2 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

**Specimen Minimum Volume:** 1.3 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

**CPT Code Information:** 83018 Thallium concentration; 82570 Creatinine concentration;

THC Confirmation, MS, SP

**Specimen Requirements:** Submit only 1 of the following specimens: Serum: Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 5 mL of serum refrigerated in plastic vial. Plasma: Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 5 mL sodium heparin plasma refrigerated in plastic vial.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
  - Frozen 180 days

**CPT Code Information:** 80349

Theophylline, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
  - Frozen 28 days
  - Ambient 72 hours

**CPT Code Information:** 80198

Thermoactinomyces vulgaris, IgG Antibodies, Serum

**CPT Code Information:**
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Serum Refrigerated (preferred) 21 days
Frozen 21 days

CPT Code Information: 86609

Thiamine (Vitamin B1), Whole Blood

Specimen Requirements: Patient Preparation: Fasting overnight (12-14 hours). Infants-draw prior to next feeding. Water can be taken as needed. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Amber vial Specimen Volume: 4 mL Collection Instructions: 1. Invert 8 to 10 times to mix blood. 2. Transfer whole blood into amber vial or tube and freeze within 24 hours.

Specimen Minimum Volume: 0.5 mL

Transport Temperature: Whole Blood EDTA Frozen 14 days

CPT Code Information: 84425

ThinPrep Diagnostic

Specimen Requirements: Patient Preparation: For optimal interpretation, Pap smears should be collected near the middle of the menstrual cycle. Avoid douching, lubricant use, or sexual intercourse for 24 hours prior to specimen collection. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap test, regardless of the volume of the aliquot (maximum aliquot volume: 4 mL). Submit only 1 of the following specimens: Supplies: Thin Prep Media with Broom Kit (T056) Specimen Type: Cervical Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm water to warm and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times. 2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. 3. As a final step, swirl broom vigorously to further release material. Discard the collection device. 4. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial. 5. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). Supplies: Thin Prep Media with Spatula and Brush Kit (T434) Specimen Type: Ectocervix and endocervix Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm water to warm and lubricate the speculum. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatusas quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate one-quarter or one-half turn in on direction. Do not over-rotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final
step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Time</th>
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<tbody>
<tr>
<td>Ambient</td>
<td>42 days</td>
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<tr>
<td>Refrigerated</td>
<td>42 days</td>
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**CPT Code Information:** G0123; 88142; 88141-TPDPC (if appropriate);

**ThinPrep Diagnostic with Human Papillomavirus (HPV) Reflex**

**Specimen Requirements:** Patient Preparation: For optimal interpretation, Papanicolaou smears should be collected near the middle of the menstrual cycle. No douching, lubricant use, and sexual intercourse for 24 hours prior to specimen collection. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap Test, regardless of the volume of the aliquot (maximum aliquot volume=4 mL). Submit only 1 of the following specimens: Specimen Type: Cervical Supplies: Thin Prep Media with Broom Kit (T056) Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm water to warm and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times. 2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. 3. As a final step, swirl broom vigorously to further release material. Discard the collection device. 4. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial. 5. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). Specimen Type: Ectocervix and endocervix Supplies: Thin Prep Media with Spatula and Brush Kit (T434) Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm water to warm and lubricate the speculum. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatulas quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate one-quarter or one-half turn in 1 direction. Do not overrotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

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**CPT Code Information:** G0123; 88142; 88141-TPDPC (if appropriate);
collected near the middle of the menstrual cycle. Avoid douching, lubricant use, and sexual intercourse for 24 hours prior to specimen collection. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap test, regardless of the volume of the aliquot (maximum aliquot volume: 4 mL). Submit only 1 of the following specimens: Supplies: Thin Prep Media with Broom Kit (T056) Specimen Type: Cervical Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm to warm water and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times. 2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. 3. As a final step, swirl broom vigorously to further release material. Discard the collection device. 4. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial. 5. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). Supplies: Thin Prep Media with Spatula and Brush Kit (T434) Specimen Type: Ectocervix and endocervix Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm to warm water and lubricate the speculum. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatulas quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate one-quarter or one-half turn in one direction. Do not overrotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

Variates Ambient (preferred) 42 days

Refrigerated 42 days

**CPT Code Information:** G0123; 88142; 88141-TPSPC (if appropriate);

**STHPV 70335 ThinPrep Screen with Human Papillomavirus (HPV) Reflex**

**Specimen Requirements:** Patient Preparation: For optimal interpretation, Papanicolaou smears should be collected near the middle of the menstrual cycle. No douching, lubricant use, and sexual intercourse for 24 hours prior to specimen collection. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap Test, regardless of the volume of the aliquot (maximum aliquot volume: 4 mL). Submit only 1 of the following specimens: Supplies: Thin Prep Media with Broom Kit (T056) Specimen Type: Cervical Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm water to warm and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times. 2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. 3. As a final step, swirl broom vigorously to further release material. Discard the collection device. 4. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial. 5. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth). Supplies: Thin Prep Media with Spatula and Brush Kit (T434) Specimen Type: Ectocervix and endocervix Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm water to warm and lubricate the speculum. Select contoured
end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatulas quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate one quarter or one half turn in 1 direction. Do not overrotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient's name and medical record number or date of birth).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**

Varies Ambient (preferred) 42 days

Refrigerated 42 days

**CPT Code Information:** G0123; 88142; 88141- TPSPC (if appropriate);
ThinPrep with Human Papillomavirus (HPV) Co-Test-Screen

**Specimen Requirements:** Patient Preparation: For optimal interpretation, Papanicolaou smears should be collected near the middle of the menstrual cycle. No douching, lubricant use, and sexual intercourse for 24 hours prior to specimen collection. Only 1 aliquot may be removed from PreservCyt sample vial prior to performing the ThinPrep Pap Test, regardless of the volume of the aliquot (maximum aliquot volume: 4 mL). Submit only 1 of the following specimens: Supplies: Thin Prep Media with Broom Kit (T056) Specimen Type: Cervical Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain adequate sampling from cervix using a broom-like collection device. If desired, use lukewarm water to warm and lubricate the speculum. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction 5 times. 2. Rinse the broom as quickly as possible into the PreservCyt solution vial by pushing broom into bottom of vial 10 times, forcing the bristles apart. 3. As a final step, swirl broom vigorously to further release material. Discard the collection device. 4. Tighten cap on vial so that the torque line on the cap passes the torque line on the vial. 5. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient’s name and medical record number or date of birth). Supplies: Thin Prep Media with Spatula and Brush Kit (T434) Specimen Type: Ectocervix and endocervix Collection Container/Tube: ThinPrep Specimen Volume: 16 mL Collection Instructions: 1. Obtain an adequate sampling from the ectocervix using a plastic spatula. If desired, use lukewarm water to warm and lubricate the speculum. Select contoured end of plastic spatula and rotate it 360 degrees around the entire exocervix while maintaining tight contact with exocervical surface. 2. Rinse spatulas quickly as possible into the PreservCyt solution vial by swirling spatula vigorously in vial 10 times. Discard the spatula. 3. Next, obtain an adequate specimen from endocervix using an endocervical brush device. Insert the brush into the cervix until only the bottommost fibers are exposed. Slowly rotate one-quarter or one-half turn in 1 direction. Do not overrotate. 4. Rinse the brush as quickly as possible in the PreservCyt solution by rotating the device in the solution 10 times while pushing against the PreservCyt vial wall. 5. Swirl brush vigorously as final step to further release material. Discard the brush. 6. Tighten the cap so that the torque line on the cap passes the torque line on the vial. 7. Specimen vial must be labeled with a minimum of 2 unique identifiers (patient’s name and medical record number or date of birth).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**
- Varies Ambient (preferred) 42 days
- Refrigerated 42 days

Thiocyanate, serum

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in plastic vial. Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in plastic vial.

**Specimen Minimum Volume:** 0.50 mL Does not allow for repeat testing

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days

CPT Code Information: G0123; 88142; 88141-TPSPC (if appropriate);
**Thiopurine Methyltransferase (TPMT) Activity Profile, Erythrocytes**

**Specimen Requirements:** Patient Preparation: Thiopurine methyltransferase (TPMT) enzyme activity can be inhibited by several drugs and may contribute to falsely low results. Patients should abstain from the following drugs for at least 48 hours prior to TPMT testing: naproxen (Aleve), ibuprofen (Advil, Motrin), ketoprofen (Orudis), furosemide (Lasix), sulfasalazine (Azulfidine), mesalamine (Asacol), olsalazine (Dipentum), mefenamic acid (Ponstel), trimethoprim (Proloprim), methotrexate, thiazide diuretics, and benzoic acid inhibitors. Container/Tube: Preferred: EDTA Acceptable: Green top (sodium heparin), metal free sodium heparin, lithium heparin, or plasma separator tubes Specimen Volume: 5 mL

**Specimen Minimum Volume:** 3 mL

**Transport Temperature:**

- Whole blood: Refrigerated (preferred) 6 days
- Ambient: 6 days

**CPT Code Information:** 82657

**Thiopurine Methyltransferase (TPMT) and Nudix Hydrolase (NUDT15) Genotyping, Varies**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: One swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:**

- Blood: 0.4 mL
- Saliva: 1 swab

**Transport Temperature:**

- Varies

**CPT Code Information:** 0034U

**Thiosulfate, Urine**

**Specimen Requirements:** Send 6 mL from a random urine collection. Send specimen refrigerated in a plastic (preservative-free) urine container.
Specimen Minimum Volume: 2.8 mL

Transport Temperature:
Urine Refrigerated (preferred) 30 days
  Frozen 90 days
  Ambient 72 hours

CPT Code Information: 82542; 82570; 81002 (if appropriate);

Thiothixene (Navane)

Specimen Requirements: Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 3 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Varies Refrigerated (preferred) 14 days
  Frozen 180 days
  Ambient 72 hours

CPT Code Information: 80342

Thrombin Time (Bovine), Plasma

Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20°C or, ideally, < or =-40°C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85670

Thrombin-Antithrombin Complex

Specimen Requirements: Draw blood in a light-blue top (sodium citrate) tube. Spin down and send 1 mL citrated plasma frozen in plastic vial. Note: Separate specimens must be submitted when multiple tests are ordered.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Thrombophilia Profile

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Both blood and plasma are required. Specimen Type: Whole blood

- **Container/Tube:** Preferred: Yellow top (ACD) Acceptable: EDTA, sodium citrate
- **Specimen Volume:** 6 mL

**Collection Instructions:**
1. Invert several times to mix blood.
2. Do not transfer blood to other containers.
3. Label specimen as whole blood.

**Patient Preparation:**
1. Patient should not be receiving Coumadin, heparin, direct thrombin inhibitors (argatroban, dabigatran), or direct factor Xa inhibitors (apixaban, rivaroxaban, and edoxaban).
2. Specimen must be drawn prior to initiation of anticoagulants and thrombolytic therapy.

**Specimen Type: Platelet-poor plasma**

- **Collection Container/Tube:** Light-blue top (citrate)
- **Submission Container/Tube:** Polypropylene vials
- **Specimen Volume:** 6 mL in 6 Polypropylene vials each containing 1 mL

**Collection Instructions:**
1. Spin down, remove plasma, and spin plasma again.
2. Freeze specimen aliquots immediately at or below -40°C, if possible.
3. Label specimens as plasma.

**Additional Information:**
1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.
2. If priority specimen, mark request form, give reason, and request a call-back.

**Specimen Minimum Volume:**
- Whole Blood: 3 mL
- Plasma: 5 mL in 5 polypropylene vials each containing 1 mL

**Transport Temperature:**
- Plasma Na Cit Frozen: 14 days
- Whole blood: Ambient (preferred) 7 days
  - Frozen: 14 days
  - Refrigerated: 14 days

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Thrombopoietin (TPO)

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Frozen 30 days

**CPT Code Information:** 83520

**THYM**

82606

**Thyme, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days

Frozen 90 days

**CPT Code Information:** 86003

**TGAB**

84382

**Thyroglobulin Antibody, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Red top Specimen Volume: 0.6 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection. Additional Information: If thyroglobulin tumor marker testing is desired, do not order this test; order HTG2 / Thyroglobulin, Tumor Marker, Serum, which includes both thyroglobulin and thyroglobulin antibody or HTGR / Thyroglobulin, Tumor Marker Reflex to LC-MS/MS or Immunoassay, depending on caregiver’s preference.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

Serum Red Refrigerated (preferred) 7 days

Frozen 30 days

**CPT Code Information:** 86800

**THYR**

70565

**Thyroglobulin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

TECHONLY Ambient (preferred)

Refrigerated
**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**TGMS 62749**

**Thyroglobulin Mass Spectrometry, Serum**

**Specimen Requirements:**
- Container/Tube: Red top
- Specimen Volume: 1.25 mL

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 416 days
- Ambient 72 hours

**CPT Code Information:** 84432

**HTGR 62936**

**Thyroglobulin, Tumor Marker Reflex to LC-MS/MS or Immunoassay**

**Specimen Requirements:**
- Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.
- Container/Tube: Red top
- Specimen Volume: 1 mL

**Collection Instructions:** Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1.0 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 30 days

**CPT Code Information:** 86800

**HTGFN 61842**

**Thyroglobulin, Tumor Marker, Fine-Needle Aspiration (FNA)-Needle Wash, Lymph Node**

**Specimen Requirements:**
- Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.
- Collection Container/Tube: Plain, plastic, screw-top tube
- Specimen Volume: 1 to 1.5 mL

**Collection Instructions:**
1. Needle wash specimens for analysis should be collected in conjunction with cytology specimens.
2. Have saline available prior to start of procedure. Saline is the only acceptable solution for needle washings.
3. After each fine-needle aspiration biopsy (FNAB) has been collected and the material in the needle has been expelled onto a slide for cytologic analysis, attach the used FNAB needle to an empty syringe.
4. Withdraw between 0.10 mL and 0.25 mL of saline up through the needle until the saline starts to fill the hub of the needle or end of the syringe.
5. Expel this fluid back through the needle into a separate plastic screw-top tube. This is the needle washing used for analysis.
6. Repeat steps 2 through 4 for each needle pass of the same biopsied site and empty into the same tube, accumulating a total of 0.5 mL to 1.5 mL of fluid to send to the laboratory. (If more than 1 site is biopsied, see Additional Information)
7. Inspect specimen for visible blood or tissue contamination:
   - a. If bloody, centrifuge specimen and transfer supernatant to a new plastic aliquot tube (5-mL standard tube) to send to laboratory. The supernatant, not the cellular material, is used for analysis.
   - b. If specimen is clear, centrifugation is not necessary.
8. Refrigerate within 1 to 2 hours of collection. Send specimen frozen (preferred) or refrigerate to Mayo Clinic Laboratories for analysis.

Additional information...
Information 1. If more than 1 site is biopsied, each washing material should be submitted on a separate tube and under a different order number. 2. A minimum of 0.5 mL is required for testing; however, the total collection volume should not exceed 1.5 mL. Sample volumes outside these parameters may be rejected. 3. Do not send saline control. This test has been validated to rule-out saline matrix effect.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Fine Needle Wash Frozen (preferred) 90 days
  - Refrigerated 14 days

**CPT Code Information:** 84432

### Thyroglobulin, Tumor Marker, Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Red top Submission Container/Tube: Plastic screw-top aliquot tube Specimen Volume: 1 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days

**CPT Code Information:** 84432-Thyroglobulin, tumor marker; 86800-Thyroglobulin antibody screen;

### Thyroid Autoantibodies Profile, Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days

**CPT Code Information:** 86376-Thyroperoxidase antibody; 86800-Thyroglobulin antibody ;

### Thyroid Function Cascade, Serum

**Specimen Requirements:** Patient Preparation: In patients receiving therapy with high biotin doses (ie, >5 mg/day), no specimen should be taken until at least 8 hours after the last biotin administration. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.
Specimen Minimum Volume: 1 mL

Transport Temperature:
Serum Refrigerated (preferred) 7 days
    Frozen 30 days
    Ambient 72 hours

CPT Code Information: 84443-Thyroid-stimulating hormone-sensitive (s-TSH); 84439-T4 (thyroxine), free (if appropriate); 84480-T3 (triiodothyronine), total (if appropriate); 86376-Thyroperoxidase (TPO) antibodies (if appropriate);

TTF8G
Thyroid Transcription Factor (8G7G3/1) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
    Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

TTFSP
Thyroid Transcription Factor (SPT24) Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
TECHONLY Ambient (preferred)
    Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;

TTFK5
Thyroid Transcription Factor 1 (TTF1) (SPT24) + Keratin 5/6 (KRT5/6) Immunostain, Technical Component

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block
Thyroid-Stimulating Hormone (TSH), Beta Immunostain, Technical Component Only

**Specimen Requirements:**
- **Supplies:** Immunostain Technical Only Envelope (T693)
- **Specimen Type:** Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
- **Preferred:** 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. 
- **Acceptable:** Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88344-TC

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Thyroid-Stimulating Hormone-Sensitive (s-TSH), Serum

**Specimen Requirements:**
- **Patient Preparation:** For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.
- **Container/Tube:** Preferred: Serum gel
- **Acceptable:** Red top

**Specimen Volume:** 0.6 mL

**Collection Instructions:**
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days
- Ambient 7 days

**CPT Code Information:** 84443

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Thyroid-Stimulating Immunoglobulin (TSI), Serum

**Specimen Requirements:**
- **Container/Tube:** Preferred: Red top
- **Acceptable:** Serum gel

**Specimen Volume:** 0.5 mL

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Frozen (preferred) 60 days
- Refrigerated 7 days
- Ambient 24 hours

**CPT Code Information:** 8634
CPT Code Information: 84445

**TPO**

**81765**

**Thyroperoxidase (TPO) Antibodies, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Red top Specimen Volume: 0.6 mL

Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 30 days

CPT Code Information: 86376

**THYRO**

**81797**

**Thyrotropin Receptor Antibody, Serum**

**Specimen Requirements:** Patient Preparation; For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days

CPT Code Information: 83520

**TBGI**

**9263**

**Thyroxine-Binding Globulin (TBG), Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.35 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 30 days

CPT Code Information: 84442

**T4BPE**

**38507**

**Thyroxine-Binding Protein Electrophoresis, Serum**

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.6 mL

Collection Instructions: Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 7 days
- Frozen 30 days
skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1.6 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 14 days

**CPT Code Information:** TBPE: 82664; T4: 84436;

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**FGTIA 75019**

**Tiagabine (Gabitril), Serum**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 3 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
- Serum Red Refrigerated (preferred) 14 days
- Frozen 180 days
- Ambient 72 hours

**CPT Code Information:** 80199

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**TICKS 83265**

**Tick-Borne Disease Antibodies Panel, Serum**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: 5-mL aliquot tube (T465) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.7 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 10 days
- Frozen 14 days

**CPT Code Information:** 86618; 86666 x 2; 86753; 86617 x 2-Lyme disease Western blot (if appropriate);

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**TKPNL 40203**

**Tick-Borne Panel, Molecular Detection, PCR, Blood**

**Specimen Requirements:** Container/Tube: Lavender top (EDTA) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Whole Blood EDTA Refrigerated (preferred) 7 days

**Frozen** 7 days
Ticlopidine, Serum/Plasma

Specimen Requirements: Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s). (Serum gel tube is not acceptable.) Spin down and send 1 mL of serum refrigerate in preservative-free plastic vial. Note: Label specimen appropriately (serum). Plasma Draw blood in a purple-top (EDTA) tube(s). (Plasma gel tube is not acceptable.) Spin down and send 1 mL of EDTA plasma refrigerate in preservative-free plastic vial. Note: Label specimens appropriately (plasma).

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Varies Refrigerated (preferred) 16 days
Frozen 60 days

Tilapia IgE

Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

Timothy Grass, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

Tin, Blood

Specimen Requirements: Draw blood in a royal blue-top (metal free EDTA) tube. Send 2 mL
metal free EDTA whole blood refrigerated.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Whole Blood EDTA - Metal Free (ERB) Refrigerated (preferred) 14 days

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**CPT Code Information:** 83018

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**FFTIN**  
**91101**

**Tin, Serum**

**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a metal free tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of metal free serum refrigerated in a plastic vial. Plasma Draw blood in an EDTA metal-free royal blue-top tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL metal-free EDTA plasma refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Varies Refrigerated (preferred) 14 days

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**CPT Code Information:** 83018

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**FXTDS**  
**57733**

**Tissue Drug Screen**

**Specimen Requirements:** 50 grams of tissue in sterile container, frozen immediately.

**Specimen Minimum Volume:** 2 grams

**Transport Temperature:**
Tissue Frozen (preferred) 180 days

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**CPT Code Information:** 80307

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**TISSR**  
**45444**

**Tissue Processing (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
Varies Varies

**CPT Code Information:** 87176
**Tissue Transglutaminase (tTG) Antibodies, IgA and IgG Profile, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel, Acceptable: Red top
- **Specimen Volume:** 0.5 mL
- **Specimen Minimum Volume:** 0.4 mL
- **Transport Temperature:**
  - Serum: Refrigerated (preferred) 7 days, Frozen 14 days

**CPT Code Information:** 83516 x 2

**Tissue Transglutaminase (tTG) Antibody, IgA, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel, Acceptable: Red top
- **Specimen Volume:** 0.5 mL
- **Specimen Minimum Volume:** 0.4 mL
- **Transport Temperature:**
  - Serum: Refrigerated (preferred) 7 days, Frozen 14 days

**CPT Code Information:** 83516

**Tissue Transglutaminase (tTG) Antibody, IgG, Serum**

**Specimen Requirements:**
- **Container/Tube:** Preferred: Serum gel, Acceptable: Red top
- **Specimen Volume:** 0.5 mL
- **Specimen Minimum Volume:** 0.4 mL
- **Transport Temperature:**
  - Serum: Refrigerated (preferred) 7 days, Frozen 14 days

**CPT Code Information:** 83516

**Titanium, Serum**

**Specimen Requirements:**
- **Collection Container/Tube:** Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184)
- **Submission Container/Tube:** 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173)
- **Specimen Volume:** 1.2 mL
- **Collection Instructions:**
  1. Allow specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction.
  2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer.
  3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.
- **Additional Information:**
  - High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be
collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 28 days
  - Ambient 7 days

**CPT Code Information:** 83018

**TLE1 70567**

**TLE-1 Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**FNFAS 57889**

**TNF-alpha (TNF-a) Serum**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 1 mL Collection Instructions: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 1 mL of serum frozen in a plastic vial

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 365 days

**CPT Code Information:** 83520

**TNFRZ 35561**

**TNFRSF1A Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Ambient  
(preferred)  
Frozen  
Refrigerated  

**CPT Code Information:** 81479- Unlisted molecular pathology procedure code

### TOBAC 82620  
**Tobacco, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**  
Serum Refrigerated (preferred) 14 days  
Frozen 90 days

**CPT Code Information:** 86003

### TOBPA 37063  
**Tobramycin, Peak, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum for a peak level should be drawn 30 to 60 minutes after last dose. 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 28 days  
Ambient 72 hours

**CPT Code Information:** 80200

### TOBRA 37065  
**Tobramycin, Random, Serum**

**Specimen Requirements:** Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**  
Serum Refrigerated (preferred) 7 days  
Frozen 28 days
**Ambient** 72 hours

**CPT Code Information:** 80200

### TOBTA 37064

**Tobramycin, Trough, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top
Specimen Volume: 0.5 mL Collection Instructions: 1. Draw blood no more than 30 minutes before next scheduled dose. 2. Serum gel tubes should be centrifuged within 2 hours of collection. 3. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 28 days
- Ambient 72 hours

**CPT Code Information:** 80200

### FHIPP 91121

**Toluene as Hippuric Acid, Occupational Exposure, Urine**

**Specimen Requirements:** 10 mL aliquot of random or spot urine collected at end of shift. Send specimen refrigerated. Tubes should be filled to prevent loss of volatile compound into headspace.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 83921/Organic acid, single, quantitative; 82570/Creatinine, other source;

### FFTLB 91141

**Toluene, Occupational Exposure, Blood**

**Specimen Requirements:** Draw blood in 2 green top (sodium heparin) tubes. Tubes should be filled to prevent loss of volatile compound into headspace. Send 20 mL of sodium heparin whole blood refrigerated.

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- WB Sodium Heparin Refrigerated (preferred) 14 days
- Frozen 365 days

**CPT Code Information:** 84600

### FFTOL 91122

**Toluene, Occupational Exposure, Serum**

**CPT Code Information:** 8000
**Specimen Requirements:** Submit only 1 of the following specimens: Serum Draw blood in a plain, red-top tube(s), serum gel tube is not acceptable. Spin tubes immediately and fill 2 transfer tubes completely to prevent loss of volatile compound into headspace. Send 20 mL of serum refrigerated. Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin tubes immediately and fill 2 transfer tubes completely to prevent loss of volatile compound into headspace. Send 20 mL sodium heparin plasma refrigerated.

**Specimen Minimum Volume:** 2.5 mL

**Transport Temperature:**
- Varies Refrigerated (preferred) 14 days
- Frozen 180 days

**CPT Code Information:** 84600

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**FMATG**

**Tomato IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

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**TOMA**

**Tomato, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**TOPI**

**Topiramate, Serum**

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Serum must be separated from cells within 2 hours of drawing.

**Specimen Minimum Volume:** 0.5 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days

CPT Code Information: 80201

TRCHG
61859

ToRCH Profile IgG, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic Vial Specimen Volume: 2 mL Collection Instructions: Centrifuge and aliquot serum
Specimen Minimum Volume: 1.2 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86644-CMV; 86695-Herpes simplex, type 1; 86696-Herpes simplex, type 2; 86762-Rubella; 86777-Toxoplasma;

TCHM
39858

ToRCH Profile IgM, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Aliquot tube Specimen Volume: 2 mL
Specimen Minimum Volume: 1.5 mL
Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86645-CMV IgM; 86694-HSV IgM; 86778-Toxoplasma IgM;

TOXOC
65873

Toxocara Antibody, IgG, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Frozen (preferred) 30 days
Refrigerated 5 days

CPT Code Information: 86682
Toxoplasma gondii Antibody, IgG, Serum

Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

Specimen Minimum Volume: 0.4 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86777

Toxoplasma gondii Antibody, IgM and IgG (Separate Determinations), Serum

Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Aliquot tube Specimen Volume: 1.5 mL

Specimen Minimum Volume: 1.2 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86778-Toxoplasma IgM; 86777-Toxoplasma IgG;

Toxoplasma gondii Antibody, IgM, Serum

Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Aliquot tube Specimen Volume: 1 mL

Specimen Minimum Volume: 0.8 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86778;

Toxoplasma Gondii IgG and IgM, CSF

Specimen Requirements: 1 mL of spinal fluid (CSF) sent refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
CSF Refrigerated (preferred) 14 days
Frozen 30 days
Ambient 7 days
PTOX

81795

Toxoplasma gondii, Molecular Detection, PCR

Specimen Requirements: Submit only 1 of the following specimens:
- Specimen Type: Amniotic fluid
  Container/Tube: Amniotic fluid container
  Specimen Volume: 0.5 mL
  Collection Instructions: Do not centrifuge.
- Specimen Type: Spinal fluid
  Supplies: Aliquot Tube, 5 mL (T465)
  Container/Tube: Preferred: 12 x 75-mm screw cap vial (T465)
  Acceptable: Sterile vial
  Specimen Volume: 0.5 mL
  Collection Instructions: Do not centrifuge.
- Specimen Type: Fresh tissue
  Supplies: M4-RT (T605)
  Container/Tube: Preferred: Multimicrobe Medium (M4-RT) (T605)
  Acceptable: Sterile container with 1 to 2 mL of sterile saline
  Specimen Volume: Entire collection
  Collection Instructions: Submit only fresh tissue in a sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT, M4, or M5)
- Specimen Type: Ocular fluid
  Supplies: Aliquot Tube, 5 mL (T465)
  Container: 12 x 75-mm screw cap vial (T465)
  Specimen Volume: 0.3 mL
  Collection Instructions: Do not centrifuge.

Specimen Minimum Volume:
- Amniotic Fluid: 0.3 mL
- Ocular Fluid: 0.3 mL
- Spinal Fluid: 2 x 2mm biopsy
- Tissue: 2 x 2mm biopsy

Transport Temperature:
- Varies Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87798

TOXB

62977

Toxoplasma gondii, Molecular Detection, PCR, Blood

Specimen Requirements: Container/Tube: Lavender top (EDTA)
Specimen Volume: 1 mL

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
- Whole Blood EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

CPT Code Information: 87798

TOXO

70569

Toxoplasma Immunostain, Technical Component Only

Specimen Requirements: Supplies: Immunostain Technical Only Envelope (T693)
Specimen Type: Tissue
Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25 - x 75- x 1-mm) per test ordered; sections 4-microns thick
Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

Transport Temperature:
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88342-TC, primary; 88341-TC, if additional IHC;
**TP53**

**Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81405-TP53 (tumor protein 53) (eg, Li-Fraumeni syndrome, tumor samples), full gene sequence or targeted sequence analysis of >5 exons; ; Hereditary Colon Cancer CGH Array; 81228-Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (eg, Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis);

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**TRAG**

**Tragacanth, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**TRAM**

**Tramadol and Metabolite, Random Urine**

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Plastic urine container Submission Container/Tube: Aliquot Tube, 5 mL (T465) Specimen Volume: 2 mL Collection Instructions: No preservative.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Ambient 14 days
- Frozen 14 days

**CPT Code Information:** 80373; G0480 (if appropriate);
**Transcription Factor E3 (TFE3) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Transferrin, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days
Frozen 180 days
Ambient 7 days

**CPT Code Information:** 84466

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**Transforming Growth Factor beta, Serum**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and immediately freeze and send 1 mL of serum in a plastic vial. Note: Critical frozen. Separate specimens must be submitted when multiple tests are ordered.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Frozen 365 days

**CPT Code Information:** 83520

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**Transmembrane Activator and CAML Interactor (TACI) Gene, Full Gene Analysis**

**Specimen Requirements:** Multiple whole blood EDTA genotype tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Container/Tube: Lavender top (EDTA)
Specimen Volume: 3 mL Collection Instructions: Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Whole Blood EDTA Ambient (preferred)
Refrigerated

**CPT Code Information:** 81479-Unlisted molecular pathology procedure

**Trazodone (Desyrel)**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days
Frozen 180 days
Ambient 72 hours

**CPT Code Information:** 80338

**Tree of Heaven (Ailanthus spp) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003

**Tree Panel # 1**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days
CPT Code Information: 86003

**TREE2**

**81703**

**Tree Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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<th>Refrigerated (preferred)</th>
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<tbody>
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<td></td>
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<td>90 days</td>
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</table>

CPT Code Information: 86003

**TREE3**

**81704**

**Tree Panel # 3**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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</tbody>
</table>

CPT Code Information: 86003

**TREE4**

**81705**

**Tree Panel # 4**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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<td>90 days</td>
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</table>

CPT Code Information: 86003

**TREPE**

**70571**

**Treponema pallidum Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

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</table>
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC; 90119

**FHAL**

**Triazolam (Halcion)**

**Specimen Requirements:** Submit only 1 of the following specimens: Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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<td>Ambient</td>
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</table>

**CPT Code Information:** 80346; G0480 (if appropriate);

**STRIC**

**Trichinella Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**

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</table>

**CPT Code Information:** 86784

**FFTRU**

**Trichloroacetic Acid, Urine**

**Specimen Requirements:** Submit a 10 mL aliquot from a random or spot urine collected at end of shift, end of exposure, or end of workweek. Send specimen refrigerated.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Days</th>
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</thead>
<tbody>
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</table>

**CPT Code Information:** 83921 â€“ Organic acid, single, quantitative; 82570 â€“ Creatine, other source;

**TRVI**

**Trichoderma viride, IgE**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL: For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Trichomonas vaginalis by Nucleic Acid Amplification**

**Specimen Requirements:** This test is performed only on female patients. Submit only 1 of the following specimens: Specimen Type: Endocervix Supplies: Swab, Aptima Male/Female Collection (T583) (also known as APTIMA Collection Unisex Swab) Specimen Volume: Adequate amount Collection Instructions: 1. Endocervix specimens must be collected using the APTIMA Collection Unisex Swab (T583) 2. Use cleaning swab (white shaft) to remove excess mucus from endocervix and discard. 3. Insert second swab (blue shaft) 1 to 1.5 cm into endocervical canal, and rotate swab gently for 30 seconds. Avoid touching vaginal wall when removing swab. 4. Place second swab (blue shaft) into APTIMA transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 5. Cap tube securely, and label tube with patient's entire name, and date and time of collection. Specimen Stability Information: Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for up to 180 days. Specimen Type: Vaginal Supplies: Swab, Aptima Multitest Swab Specimen Collection Kit (T584) Specimen Volume: Adequate amount Collection Instructions: 1. Vaginal specimens must be collected using the APTIMA Multitest Swab Specimen Collection Kit (T584), formerly called Aptima Vaginal Swab Specimen Collection Kit. 2. Insert swab (pink shaft) about 5 cm past introitus and rotate gently for 30 seconds. 3. Place swab into APTIMA transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 4. Cap tube securely, and label tube with patient's entire name, and date and time of collection. Specimen Stability Information: Transport and store swab container at 2 to 30°C (refrigerate is preferred temperature) within 60 days of collection. If longer storage is needed, freeze at -20 to -70°C for up to 180 days. Specimen Type: Urine Supplies: Aptima Urine Transport Tube (T582) Container/Tube: APTIMA Urine Specimen Transport Tube (T582) Specimen Volume: 15-20 mL Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to specimen collection. 2. Patient should collect first portion of random voided urine (first part of stream) into a sterile, plastic, preservative-free container. 3. Transfer 2 mL of urine into the APTIMA urine specimen transport tube using the disposable pipette provided within 24 hours of collection. The correct volume of urine has been added when the fluid level is between the black fill lines on the APTIMA urine transport tube. Place the labels on the transport tube so the back fill lines are still visible for volume confirmation. Specimen Stability Information: Transport and store urine specimen transport tube at 2 to 30°C (refrigerate is preferred temperature) within 30 days of collection. If longer storage is needed, freeze at -20 to -70°C for up to 180 days. Specimen Type: ThinPrep Specimen (Endocervix) Supplies: Aptima Thin Prep Transport Tube (T652) Container/Tube: ThinPrep (also called PreservCyt) Collection Kit Specimen Volume: 1 mL Collection Instructions: 1. Aliquot ThinPrep specimen for Trichomonas and/or Chlamydia and/or Neisseria testing before processing for Pap smear. For each specimen, use a new pair of clean gloves. 2. Vortex ThinPrep/PreservCyt vial 3 to 10 seconds. Within 1 minute of vortexing: A. Transfer 1 mL of specimen into the APTIMA Specimen Transfer Tube (T652) using a disposable transfer pipette or a pipette tip containing a filter (aerosol barrier or hydrophobic plug). B. Process only 1 ThinPrep and transfer tube set at a time. C. Recap APTIMA Specimen Transfer Tube tightly and gently invert 3 times to mix. 3. Label APTIMA transfer tube with appropriate label. 4. Use remainder of ThinPrep specimen for Pap testing. Specimen Stability Information: Transport and store urine specimen transport tube at 2 to 30°C (refrigerate is preferred temperature) within 30 days of collection. If longer storage is needed, freeze at -20 to -70°C.
at -20 to -70°C for up to 180 days.

**Specimen Minimum Volume:** The correct volume of urine has been added when the fluid level is between the black fill lines on the urine transport tube.

**Transport Temperature:**
- Refrigerated (preferred)
  - Frozen: 180 days
  - Ambient: 30 days

**CPT Code Information:** 87661

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**MTRNA**

**Trichomonas vaginalis, Miscellaneous Sites, by Nucleic Acid Amplification**

**Specimen Requirements:** This test is performed only on male patients. Submit only 1 of the following specimens: Specimen Type: Urine Supplies: Aptima Urine Transport Tube (T582) Container/Tube: APTIMA Urine Specimen Transport Tube (T582) Specimen Volume: 15-20 mL Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to specimen collection. 2. Patient should collect first portion of random voided urine (first part of stream) into a sterile, plastic, preservative-free container. 3. Transfer 2 mL of urine into the APTIMA urine specimen transport tube using the disposable pipette provided within 24 hours of collection. The correct volume of urine has been added when the fluid level is between the black fill lines on the APTIMA urine transport tube. Specimen Type: Urine (following prostatic massage) Supplies: Aptima Urine Transport Tube (T582) Container/Tube: APTIMA Urine Specimen Transport Tube (T582) Specimen Volume: 15-20 mL Collection Instructions: 1. Patient should not have urinated for at least 1 hour prior to specimen collection. 2. Patient should void a small amount of urine prior to prostatic massage. Pre-massage urine can be discarded or submitted for other testing as applicable. 3. Patient then ceases voiding and a prostatic massage is performed by the urologist or other health care professional. 4. Collect post-massage urine into a sterile, plastic, preservative-free container. 5. Transfer 2 mL of post-massage urine specimen into the APTIMA urine specimen transport tube using the disposable pipette provided within 24 hours of collection. The correct volume of urine has been added when the fluid level is between the black fill lines on the APTIMA urine transport tube. Specimen Type: Urethral Supplies: Swab, Aptima Male/Female Collection (T583) Container/Tube: APTIMA Collection Unisex Swab (T583) Specimen Volume: Swab Collection Instructions: 1. Urethral specimens must be collected using an APTIMA Collection Unisex Swab (T583). 2. Patient should not have urinated for at least 1 hour prior to collection. 3. With a rotating movement, insert swab (blue shaft) 2 to 4 cm into urethra. 4. Once inserted, rotate swab gently at least 1 full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds. 5. Place swab in the APTIMA transport tube provided in collection kit. Snap off swab at score line so swab fits into closed tube. 6. Cap tube securely, and label tube with patient's entire name, and date and time of collection.

**Specimen Minimum Volume:** The correct volume of urine has been added when the fluid level is between the black fill lines on the urine transport tube.

**Transport Temperature:**
- Refrigerated (preferred) 30 days
  - Ambient: 30 days

**CPT Code Information:** 87661

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**TCPT**

**Trichophyton rubrum, IgE**

Current as of January 8, 2019 2:39 am CST   800-533-1710 or 507-266-5700 or mayocliniclabs.com  Page 1102
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Trichosporon pullulans, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**Triglycerides, Body Fluid**

**Specimen Requirements:** Collection Container/Tube: Sterile container Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: Centrifuge to remove any cellular material.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Frozen (preferred) 30 days
  - Refrigerated 7 days
  - Ambient 24 hours

**CPT Code Information:** 84478

**Triglycerides, CDC, Serum**

**Specimen Requirements:** Only orderable as part of a profile. For more information see LMPP / Lipoprotein Metabolism Profile.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
TRIGN 113636

Triglycerides, Non-Fasting, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

CPT Code Information: 84478

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TRIG 8316

Triglycerides, Serum

**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours) 2. Patient must not consume any alcohol for 24 hours before the specimen is drawn. Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
- Frozen 90 days

CPT Code Information: 84478

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TMA 82867

Trimellitic Anhydride, TMA, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003
**Trimethoprim, Serum**

**Specimen Requirements:**
Collection Container/Tube: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL
Collection Instructions: 1. Serum for a peak level should be drawn at least 60 minutes after a dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 28 days

Ambient 28 days

Frozen 28 days

**CPT Code Information:** 80299

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**Trimipramine, Serum**

**Specimen Requirements:**
Container/Tube: Red top
Specimen Volume: 1 mL
Collection Instructions: 1. Draw specimen immediately before next scheduled dose (minimum 12 hours after last dose). 2. Serum must be separated from cells within 2 hours of draw.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 28 days

Frozen 28 days

Ambient 7 days

**CPT Code Information:** 80335; G0480 (if appropriate);

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**Tripeptidyl Peptidase 1 (TPP1) and Palmitoyl-Protein Thioesterase 1 (PPT1), Fibroblasts**

**Specimen Requirements:**
Submit only 1 of the following specimens:
Specimen Type: Cultured fibroblasts
Container/Tube: T-75 or T-25 flask
Specimen Volume: 1 Full T-75 flask or 2 full T-25 flasks
Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours
Specimen Type: Skin biopsy
Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin: T115).
Specimen Volume: 4-mm punch
Specimen Stability Information: Refrigerated (preferred)/Ambient

**Transport Temperature:**
Tissue Varies

**CPT Code Information:** 82657-TPP1 and PPT1; 88233-Fibroblast culture; 88240-Cryopreservation for biochemical studies;

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**Tripeptidyl Peptidase 1 (TPP1) and Palmitoyl-Protein Thioesterase 1 (PPT1), Leukocytes**
Specimen Requirements: Container/Tube: Preferred: Yellow top (ACD solution B) Acceptable: Yellow top (ACD solution A) Specimen Volume: 6 mL Collection Instructions: Do not transfer blood to other containers.

Specimen Minimum Volume: 5 mL

Transport Temperature:
Whole Blood ACD Refrigerated (preferred) 6 days
Ambient 72 hours

CPT Code Information: 82657

Trofile Co-Receptor Tropism Assay

Specimen Requirements: Draw blood in either PPT (pearl top) or lavender-top (EDTA) tubes. Remove plasma from cells immediately, and transfer specimen to a screw-capped, plastic vial. Freeze 3 mL of PPT plasma or EDTA plasma immediately, send specimen frozen. RECOMMENDED: 1. Patient's most recent viral load 2. Viral load collection date Note: 1. Intended to use only for patients with viral loads greater than or equal to 1000 copies/mL. For best results, viral loads should be confirmed within two weeks prior to submission for testing at Monogram. 2. Patient samples submitted <30 days apart are considered duplicate and will be cancelled.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Plasma EDTA Frozen 14 days

CPT Code Information: 87999

Trofile DNA Co-Receptor Tropism Assay

Specimen Requirements: Draw 4 mL blood in a lavender-top (EDTA) tube(s), (Do not centrifuge.) Freeze and ship frozen. Note: Trofile DNA is recommended for patients with undetectable viral loads.

Specimen Minimum Volume: 3 mL

Transport Temperature:
Whole Blood EDTA Frozen 14 days

CPT Code Information: 87999

Tropheryma whipplei, Molecular Detection, PCR

Specimen Requirements: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Tropheryma whipplei DNA is unlikely. Submit only 1 of the following specimens: Specimen Type: Fresh tissue or biopsy Sources: Small intestine tissue (duodenum, ileum, or jejunum), lymph node, other visceral tissue, synovial tissue, gastrointestinal tissue, heart valve, or brain Container/Tube: Sterile container Specimen Volume: Entire collection or 5 mm(3) Collection Instructions: Collect fresh tissue specimen Stability Information: Refrigerated <7 days (preferred)/Frozen <7 days Supplies: Tissue Block Container (T553) Specimen Type: Paraffin-embedded tissue block Sources: Small intestine tissue (duodenum, ileum, or jejunum), lymph node, other visceral tissue, synovial tissue, gastrointestinal tissue, heart valve, or brain
Container/Tube: Sterile container for cut sections or Tissue Block Container (T553) Collection
Instructions: Submit formalin-fixed, paraffin-embedded tissue block to be cut and returned. Alternately, perform cuts and place two to five 10-micron sections in a sterile container for submission Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Fluid Sources: Cerebrospinal or ocular (eg, vitreous humor) Container/Tube: Sterile vial Specimen Volume: 0.5 mL Specimen Stability Information: Refrigerated <7 days (preferred)/Frozen <7 days Specimen Type: Synovial fluid Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Pink top (EDTA), royal blue top (EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile container Specimen Volume: 0.5 mL Collection Instructions: Send specimen in original tube (preferred). Specimen Stability Information: Refrigerated <7 days (preferred)/Frozen <7 days

**Specimen Minimum Volume:** Spinal fluid, synovial fluid, or vitreous humor fluid: 0.5 mL Fresh tissue or biopsy: 5 mm(3) Paraffin-embedded tissue block: two 10-micron sections

**Transport Temperature:**
Varies

**CPT Code Information:** 87798

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**Tropheryma whipplei, Molecular Detection, PCR, Blood**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Tropheryma whipplei DNA is unlikely. Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred).

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Whole Blood EDTA Refrigerated (preferred) 7 days

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<tr>
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</table>

**CPT Code Information:** 87798

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**Tropomyosin Receptor Kinase (TRK) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Troponin I, Serum

**Specimen Requirements:** Patient Preparation: For 12 hours before this test do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins. Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen (preferred)  30 days
- Ambient  24 hours
- Refrigerated  24 hours

**CPT Code Information:** 84484

Troponin T, 5th Generation, Plasma

**Specimen Requirements:** Collection Container/Tube:Preferred: Lithium heparin gel Acceptable: Lithium heparin Submission Container/Tube: Plastic vial Specimen Volume: 1 mL Collection Instructions: 1. Lithium heparin gel tubes should be centrifuged within 2 hours of collection. 2. Plasma from lithium heparin tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Plasma Li Heparin Frozen (preferred)  365 days
- Ambient  24 hours
- Refrigerated  24 hours

**CPT Code Information:** 84484

Trout, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
- Frozen  90 days

**CPT Code Information:** 86003

Trypanosoma cruzi IgG Antibody ELISA, Serum

**CPT Code Information:**

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Current as of January 8, 2019 2:39 am CST  
800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Frozen 14 days

**CPT Code Information:** 86753-T. cruzi IgG, ELISA, S; 86753-T. cruzi IgG, LFA, S (if appropriate);

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**RCHAG 65945**

**Trypanosoma cruzi IgG Antibody, Lateral Flow Assay, Serum**

**Specimen Requirements:** Only orderable as a reflex. For more information see CHAG / Trypanosoma cruzi IgG Antibody ELISA, Serum.

**Transport Temperature:**
Serum Frozen 14 days

**CPT Code Information:** 86753

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**TRYPN 70572**

**Trypsin Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**TRPTS 70573**

**Tryptase Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;
Tryptase, Autopsy
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Frozen (preferred) 14 days
Refrigerated 14 days

CPT Code Information: 83520

Tryptase, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL
Specimen Minimum Volume: 0.2 mL
Transport Temperature:
Serum Frozen (preferred) 14 days
Refrigerated 14 days

CPT Code Information: 83520

Tryptophan, Plasma
Specimen Requirements: Patient Preparation: Fasting (overnight preferred, 4 hours minimum). Infants should be drawn just before next feeding (2-3 hours without total parenteral nutrition [TPN] if possible). Collection Container/Tube: Preferred: Green top (sodium heparin) Acceptable: EDTA Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge within 4 hours if specimen is stored at refrigerated temperature and aliquot plasma. Send plasma frozen.
Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Plasma Frozen 14 days

CPT Code Information: 82131

Tryptophan, Urine
Specimen Requirements: Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 2 mL Collection Instructions: Collect a random urine specimen. Additional Information: 1. Patient's age is required. 2. Include family history, clinical condition (asymptomatic or acute episode), diet, and drug therapy information.
Specimen Minimum Volume: 1 mL
Transport Temperature:
Urine Frozen (preferred) 70 days
Refrigerated 14 days

CPT Code Information: 82131

TTF40 602647 TTF41 (SPT24) + p40 Immunostain, Technical Component Only

**Specimen Requirements:** Specimen Type: Tissue Supplies; Immunostain Technical Only Envelope (T693) Container/Tube: Immunostains Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25 x 75 x 1mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

CPT Code Information: 88344-TC

ATTRZ 35352 TTR Gene, Full Gene Analysis

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Varies Ambient (preferred)
- Frozen
- Refrigerated

CPT Code Information: 81404-TTR (transthyretin) (eg. familial transthyretin amyloidosis), full gene sequence

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G131 603785 Tuberous Sclerosis Panel (Bill Only)

**Specimen Requirements:** This test is for billing purposes only. This is not an orderable test.

CPT Code Information: 81406; 81407;

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RTRP1 113477 Tubular Reabsorption of Phosphorus, Random

**Specimen Requirements:** Both serum and urine are required. Patient Preparation: Fasting Specimen Type: Serum Collection Container/Tube: Red top or serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Label specimen as serum. Specimen Type: Urine Container/Tube: Plastic, 6-mL tube Specimen Volume: 4 mL Collection Instructions: 1.
Collect a random urine specimen. 2. No preservative. 3. Label specimen as urine.

**Specimen Minimum Volume:** Urine: 1 mL; Serum: 0.625 mL

**Transport Temperature:**

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<tr>
<td></td>
<td>Refrigerated</td>
<td>7 days</td>
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<tr>
<td>Urine</td>
<td>Refrigerated</td>
<td>(preferred) 14 days</td>
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<tr>
<td></td>
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<td>14 days</td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>7 days</td>
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</table>

**CPT Code Information:** 82565-Creatinine Serum; 84100-Phosphorus inorganic (phosphate), serum; 84105-Phosphorus inorganic (phosphate), urine;

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**Tumor Necrosis Factor (TNF), Plasma**

**Specimen Requirements:** Collection Container/Tube: Lavender-top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate plasma from cells; 1,500 x g for 10 minutes 3. Freeze specimen within 30 minutes

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**

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**CPT Code Information:** 83520

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**Tuna, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Temp</th>
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</thead>
<tbody>
<tr>
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<td></td>
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</table>

**CPT Code Information:** 86003

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**Turkey Feathers, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:**  86003

**FGORG**

**Turkey IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days
Frozen  365 days
Ambient  7 days

**CPT Code Information:**  86001

**TURK**

**Turkey, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred)  14 days
Frozen  90 days

**CPT Code Information:**  86003

**FCTUR**

**Turmeric (Curcuma longa) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred)  28 days
Frozen  365 days
Ambient  28 days

**CPT Code Information:**  86003
**Tyrophagus putrescentiae, IgE**

**Specimen Requirements:**
- Container/Tube: Preferred: Red top
- Acceptable: Serum gel

**Specimen Volume:**
- 0.5 mL for each 5 allergens requested
- Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:**
- For 1 allergen: 0.3 mL
- For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**Tyrosinase (TYROS) Immunostain, Technical Component Only**

**Specimen Requirements:**
- Supplies: Immunostain Technical Only Envelope (T693)
- Specimen Type: Tissue
- Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**Tysabri (Natalizumab) Immunogenicity**

**Specimen Requirements:**
- Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Send 1 mL serum frozen in plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Frozen (preferred)
- Refrigerated 14 days

**CPT Code Information:** 83516

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**UBE3A Gene, Full Gene Analysis**

**Specimen Requirements:**
- Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens:
- Specimen Type: Whole blood
- Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD)
- Acceptable: Any
anticoagulant Specimen Volume: 3 mL
Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.
Specimen Stability Information: Ambient (preferred)/Refrigerated/Frozen
Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks
Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours
Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch
Specimen Stability Information: Refrigerated (preferred)/Ambient

**Specimen Minimum Volume**: 1 mL
**Transport Temperature**: Varies Varies

**CPT Code Information**: 81406-UBE3A (ubiquitin protein ligase E3A) (eg, Angelman syndrome), full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); ;

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**Ubiquitin (UBIQ) Immunostain, Technical Component Only**

**Specimen Requirements**: Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature**: TECHONLY Ambient (preferred) Refrigerated

**CPT Code Information**: 88342-TC, primary; 88341-TC, if additional IHC;

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**UDP-Galactose 4' Epimerase (GALE), Blood**

**Specimen Requirements**: Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Green top (sodium heparin), green top (lithium heparin), or yellow top (ACD) Specimen Volume: 5 mL

**Specimen Minimum Volume**: 2 mL

**Transport Temperature**: Whole Blood EDTA Refrigerated (preferred) 14 days Ambient 6 days

**CPT Code Information**: 82542

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**UDP-Glucuronosyl Transferase 1A1 (UGT1A1), Full Gene Sequencing**

**Specimen Requirements**: Multiple whole blood EDTA tests can be performed on a single specimen after a single extraction. See Multiple Whole Blood EDTA Genotype Tests in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens:
Specimen Type: Whole blood Container/Tube: Adults: Lavender top (EDTA) Pediatrics: Purple microtube  
Specimen Volume: Adults: 3 mL Pediatrics: 1 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred) 9 days/Refrigerated 30 days  
Specimen Type: Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786: fees apply) Container/Tube: Saliva Swab Collection Kit (T786) Specimen Volume: One swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient 30 days  
Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated  

**Specimen Minimum Volume:** Blood: 0.45 mL Saliva: one swab  
**Transport Temperature:** Varies Varies  

**CPT Code Information:** 81479  

**UDP-Glucuronosyl Transferase 1A1 TA Repeat Genotype, UGT1A1**  
Specimen Requirements: Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated  
Specimen Type: Saliva Patient Preparation: Patient should not eat, drink, smoke, or chew gum 30 minutes prior to collection. Supplies: DNA Saliva Collection Kit (T786) Container/Tube: Saliva Swab Collection Kit Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient  
Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated  

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab  
**Transport Temperature:** Varies Varies  


**Ulocladium chartarum, IgE**  
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.  

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space  
**Transport Temperature:** Serum Refrigerated (preferred) 14 days
UNIPD

35566

Uniparental Disomy

Specimen Requirements: For optimal interpretation of results, 3 specimens are required to perform this test. In addition to child or fetal specimen, a blood specimen from both parents is required. Each specimen must have a separate order for Uniparental Disomy (UNIPD / Uniparental Disomy). Only the proband specimen will be charged. Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens:

Specimen Type: Whole blood Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated

Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately.

Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient

Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

Specimen Minimum Volume: Blood: 0.5 mL Amniotic Fluid: 10 mL Chorionic Villi: 5 mg

Transport Temperature: Varies

CPT Code Information: 86003

UNHB

9095

Unstable Hemoglobin, Blood

Specimen Requirements: Only orderable as part of a profile or as a reflex. For more information see HAEVP / Hemolytic Anemia Evaluation; or HBELC / Hemoglobin Electrophoresis Cascade, Blood; or THEVP / Thalassemia and Hemoglobinopathy Evaluation; or REVE / Erthrocytosis Evaluation; or MEVP / Methemoglobinemia Evaluation.

Specimen Minimum Volume: 1 mL

Transport Temperature: Whole Blood EDTA Refrigerated 7 days

CPT Code Information: 81402

FURA

90316

Uranium, Urine

Specimen Requirements: Collect urine in acid washed or trace metal free plastic container (MML supply number T619). Submit 1 mL of urine refrigerate. Note: Avoid exposure to gadolinium based contrast media for 48 hours prior to sample collection.

Specimen Minimum Volume: 0.4 mL
**Transport Temperature:**
Urine Refrigerated (preferred) 16 days
- Frozen 30 days
- Ambient 9 days

**CPT Code Information:** 83018

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**URAU**

**Urea, 24 Hour, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL
Collection Instructions: 1. Add 10 g of boric acid as preservative at start of collection. (If boric acid is not available, refrigerate specimen during collection.) 2. Collect urine for 24 hours. 3. Mix well before taking aliquot. Additional Information: 1. 24-Hour volume is required. 2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84540

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**RURAU**

**Urea, Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 5-mL tube (T465) Specimen Volume: 4 mL
Collection Instructions: 1. Collect a random urine specimen. 2. No preservative.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84540

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**URRP**

**Ureaplasma species, Molecular Detection, PCR**

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Ureaplasma DNA is not likely. Submit only 1 of the following specimens: Supplies: M4-RT (T605) Culturette (BBL Culture Swab) (T092) Specimen Type: Swab Sources: Vaginal, cervix, urethra, urogenital, chest/mediastinal, bronchus (donor swab), or upper respiratory sources (only infants <3 months: nasopharynx, nose, throat) Container/Tube: Preferred: Culture swab transport system (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Acceptable: Swab in transport media: M4, M4-RT (T605), M5, M6, universal transport media, or ESware Specimen Volume: 1 swab Collection Instructions: Vaginal: 1. Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells. 2. Place swab back into swab cylinder. Urethra or Cervical: 1. Collect specimen by inserting swab 1 to 3 cm and rotating 360 degrees. 2. Place swab back into swab cylinder. Wound: 1. Collect specimen by swabbing back and forth over wound surface to maximize recovery of cells. 2. Place
swab back into swab cylinder. Supplies: M4-RT (T605) Specimen Type: Fluid Sources: Pelvic fluid, amniotic fluid, prostatic secretions, semen, reproductive drainage or fluid, pleural/chest fluid, chest tube fluid, pericardial fluid, sputum, tracheal secretions, bronchial washings, bronchoalveolar lavage, lung fluid; or nasal washings (only infants <3 months) Container/Tube: Preferred: Sterile container Acceptable: Specimen in 3 mL of transport media: M4, M4-RT (T605), M5, M6, or universal transport media Specimen Volume: 1-2 mL Specimen Type: Synovial Fluid Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Pink top (EDTA), royal blue top (EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile container Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred). Specimen Type: Ureaplasma species, Molecular Detection, PCR, Plasma Container/Tube: Preferred: Lavender top (EDTA) Acceptable: Royal blue top (EDTA), pink top (EDTA), or sterile vial containing EDTA-derived aliquot Specimen Volume: 1 mL Collection Instructions: Send specimen in original tube (preferred). Additional Information: The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by Ureaplasma DNA is unlikely. Specimen Minimum Volume: 0.5 mL Transport Temperature: Whole Blood EDTA Refrigerated (preferred) 7 days Frozen 7 days CPT Code Information: 87798 x 2
URCU 8529

**Uric Acid, 24 Hour, Urine**

**Specimen Requirements:**
- Container/Tube: Plastic, 5-mL tube (T465)
- Specimen Volume: 5 mL

**Collection Instructions:**
1. Add 10 g of boric acid as preservative at start of collection.
2. Collect urine for 24 hours.
3. Mix well before taking 5-mL aliquot.

**Additional Information:**
1. 24-Hour volume is required.
2. See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84560

FUABF 75099

**Uric Acid, Body Fluid**

**Specimen Requirements:**
- Acceptable specimens: Drain, Peritoneal/Ascites, Pleural or Synovial Fluid.
- Collect 1 mL body fluid, centrifuge and separate to remove cellular material.
- Send frozen in plastic container.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Body Fluid Frozen (preferred) 180 days
  - Refrigerated 5 days
  - Ambient 24 hours

**CPT Code Information:** 84560

RURCU 89846

**Uric Acid, Random, Urine**

**Specimen Requirements:**
- Container/Tube: Plastic, 5-mL tube (T465)
- Specimen Volume: 4 mL

**Collection Instructions:**
1. Collect a random urine specimen.
2. No preservative.

**Additional Information:**
- A timed 24-hour urine collection is usually the preferred specimen for measuring and interpreting this urinary analyte.
- Random collections normalized to urinary creatinine may be of clinical use in the following 2 scenarios:
  1. In patients who cannot collect a 24-hour specimen, typically small children, a uric acid to creatinine ratio can be used to approximate 24-hour excretion.
  2. When acute renal failure secondary to uric acid is suspected, a uric acid to creatinine ratio (mg/mg) >1.0 is consistent with acute uric acid nephropathy, whereas values <0.75 are consistent with other causes of acute renal failure.\(^1\)

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Urine Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84560
**URIC**

**Uric Acid, Serum**

**Specimen Requirements:**

- **Collection Container/Tube:** Preferred: Serum gel
- **Acceptable:** Red top

- **Specimen Volume:** 0.5 mL

**Submission Container/Tube:** Plastic vial

**Collection Instructions:**

1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

- Serum Refrigerated (preferred) 7 days
- Frozen 180 days

**CPT Code Information:** 84550

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**RUA**

**Urinalysis, Complete, Includes Microscopic**

**Specimen Requirements:**

- **Container/Tube:** Plastic urine container

- **Specimen Volume:** 20 mL

**Collection Instructions:**

1. Collect a random urine specimen.
2. No preservative.

**Specimen Minimum Volume:** 4 mL

**Transport Temperature:**

Urine Refrigerated 72 hours

**CPT Code Information:** 81001

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**UPGDW**

**Uroporphyrinogen Decarboxylase (UPG D), Washed Erythrocytes**

**Specimen Requirements:**

All porphyrin tests on erythrocytes can be performed on 1 draw tube.

- **Patient Preparation:** Patient should abstain from alcohol for 24 hours. Abstinence from alcohol is essential for at least 24 hours as alcohol suppresses enzyme activity for 24 hours after ingestion.

- **Collection Container/Tube:** Preferred: Green top (heparin) Acceptable: Lavender top (EDTA)

- **Submission Container/Tube:** Plastic vial

**Specimen Volume:** Washed erythrocyte suspension

**Collection Instructions:**

1. Immediately place specimen on wet ice.
2. Transfer entire specimen to a 12-mL graduated centrifuge tube.
3. Centrifuge specimen for 10 minutes at 2,000 rpm.
4. Record volume of packed cells and the total volume of the specimen.
5. Discard supernatant plasma.
6. Wash erythrocytes 2 times by resuspension with 5 mL of cold 0.9% saline, discarding supernatant after each washing.
7. Resuspend packed cells to the original total volume with 0.9% saline. Invert specimen gently to mix.

**Specimen Minimum Volume:** 1 mL of washed and resuspended erythrocytes

**Transport Temperature:**

Washed RBC Frozen 24 hours

**CPT Code Information:** 82657

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**UPGD**

**Uroporphyrinogen Decarboxylase (UPG D), Whole Blood**

Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Requirements: All porphyrin tests on whole blood can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Container/Tube: Preferred: Green top (sodium heparin) Acceptable: Lavender top (EDTA) or light, green top (lithium heparin) Specimen Volume: Full tube Collection Instructions: Immediately place specimen on wet ice.

Specimen Minimum Volume: 3 mL

Transport Temperature:
Whole blood  Refrigerated 7 days

CPT Code Information: 82657

UPGC 80288

Uroporphyrinogen III Synthase (Co-Synthase) (UPG III S), Erythrocytes

Specimen Requirements: All porphyrin tests on erythrocytes can be performed on 1 draw tube. Patient Preparation: Patient should abstain from alcohol for 24 hours. Container/Tube: Green top (heparin) Specimen Volume: Full tube Collection Instructions: Immediately place specimen on wet ice.

Specimen Minimum Volume: 3 mL

Transport Temperature:
WB Heparin  Refrigerated 7 days

CPT Code Information: 82657

FUROC 35328

UroVysion for Detection of Bladder Cancer, Urine

Specimen Requirements: Specimen Type: Urine Sources: Voided urine, catheterized urine, bladder washings, stoma collections, ureteral brushings or washings, and renal pelvic brushings or washings Supplies: FISH for Urothelial Carcinoma Urine Collection Kit (T509) Container/Tube: Preferred: FISH for Urothelial Carcinoma in Urocyte Urine Collection Kit (T509) Acceptable: 70% ethanol, PreservCyt, CytoLyt Specimen Volume: 30 mL Collection Instructions: 1. Follow instructions included with Urocyte Urine Collection Kit. 2. If kit is not used, submit a random urine specimen with an equal volume of 70% ethanol, PreservCyt, or CytoLyt.

Specimen Minimum Volume: 30 mL is recommended, however, will not reject if <30 mL

Transport Temperature:
Varies  Refrigerated (preferred)

Ambient

CPT Code Information: 88120

USPF 58104

USP6 (17p13), Aneurysmal Bone Cyst and Nodular Fasciitis, FISH, Tissue

Specimen Requirements: Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Container/Tube: Formalin-fixed, paraffin-embedded tumor tissue block Collection Instructions: Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used Acceptable: Slides Specimen Volume: Four consecutive, unstained, 5 micron-thick sections
placed on positively charged slides and 1 hematoxylin and eosin-stained slide

**Specimen Minimum Volume:** Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 DNA probe, each (first probe set), Interpretation and report; 88271x2 DNA probe, each; each additional probe set (if appropriate); 88271x1 DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 DNA probe, each; coverage for sets containing 5 probes (if appropriate) ; 88275 Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**FUAUA 75277**  
**Ustekinumab and Anti-Ustekinumab Antibodies, Serum**  
**Specimen Requirements:** Specimen Type: SST Serum Container/Tube: SST Specimen Volume: 7 mL Collection Instructions: Draw blood in a serum gel tube(s), plain red-top tube(s) is NOT acceptable. Spin down and send 7 mL of serum refrigerated (DO NOT ALIQUOT).

**Specimen Minimum Volume:** 5 mL

**Transport Temperature:**
- Serum SST Refrigerated (preferred) 7 days
- Ambient 48 hours

**CPT Code Information:** 80299; 83520;

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**USNU 82388**  
**Ustilago nuda, Mold Grain Rust, IgE**  
**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**UMM3F 35269**  
**Uveal Melanoma, Chromosome 3 Monosomy, FISH, Tissue**  
**Specimen Requirements:** Submit only 1 of the following specimens: Specimen Type: Tissue Preferred: Tissue block Collection Instructions: Submit a formalin-fixed, paraffin-embedded (FFPE)
tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used. Acceptable: Slides Collection Instructions: Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Specimen Minimum Volume:** Two consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Transport Temperature:**
- Tissue: Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88271x2, 88291 â€“ DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

**FNSVG**

**Vaginitis (VG), NuSwab**

**Specimen Requirements:** Submit one vaginal swab in APTIMA vaginal or unisex swab. Ship refrigerate.

**Specimen Minimum Volume:** One swab

**Transport Temperature:**
- Swab: Refrigerated (preferred) 30 days
- Ambient 30 days

**CPT Code Information:** 87801; 87798 x 3; 87661;

**VALPG**

**Valproic Acid, Free and Total, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum: Refrigerated (preferred) 14 days
  - Frozen 28 days
  - Ambient 72 hours

**CPT Code Information:** VALPA â€“ 80164; VALPF - 80165;

**VALPF**

**Valproic Acid, Free, Serum**

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

- Frozen: 28 days
- Ambient: 72 hours

**CPT Code Information:** 80165

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**Valproic Acid, Total, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days

- Frozen: 28 days
- Ambient: 72 hours

**CPT Code Information:** 80164

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**Vanadium, Serum**

**Specimen Requirements:** Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 1.6 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. 2. Remove the stopper. Carefully pour specimen into Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipette into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: 1. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. 2. If ordering the trace element blood collection tube from BD, order catalog #368380.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 7 days

- Ambient: 7 days
- Frozen: 7 days

**CPT Code Information:** 83018
Vancomycin, Peak, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Serum for a peak level should be drawn 1 hour after completion of dose. 2. Centrifuge and aliquot within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 48 hours

**CPT Code Information:** 80202

Vancomycin, Random, Serum

**Specimen Requirements:** Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: Centrifuge and aliquot within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 48 hours

**CPT Code Information:** 80202

Vancomycin, Trough, Serum

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 0.5 mL Collection Instructions: 1. Draw specimen immediately prior to the next dose (within 30 minutes). 2. Centrifuge and aliquot within 2 hours of collection.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days
- Frozen 365 days
- Ambient 48 hours

**CPT Code Information:** 80202

Vancomycin-Resistant Enterococcus, Molecular Detection, PCR

**Specimen Requirements:** The high sensitivity of amplification by PCR requires the specimen to...
be processed in an environment in which contamination of the specimen by Vancomycin-Resistant Enterococcus DNA is unlikely. Submit only 1 of the following specimens: Supplies: Culturette (BBL Culture Swab) (T092) C and S Vial (T058) Stool container, Small (Random), 4 oz Random (T288) Preferred: Specimen Type: Perianal, perirectal, rectal Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium [T092]) Specimen Volume: Swab Acceptable: Specimen Type: Preserved Stool Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair, Para-Pak C and S [T058]) Specimen Volume: Representative portion of stool Collection Instructions: 1. Collect fresh stool and submit 1 gram or 5 mL in container with transport medium. 2. Place stool in preservative within 2 hours of collection. Specimen Type: Unpreserved stool Container/Tube: Stool container (T288) Specimen Volume: Representative portion of stool

**Transport Temperature:**
- Varies Refrigerated (preferred) 7 days
- Ambient 7 days
- Frozen 7 days

**CPT Code Information:** 87500

**FVANG**

**Vanilla IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**VANIL**

**Vanilla, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**VH**

**Vanillylmandelic Acid (VMA) and Homovanillic Acid (HVA),**
Random, Urine

**Specimen Requirements:** Patient Preparation: Administration of L-dopa may falsely increase homovanillic acid and vanillylmandelic acid results; it should be discontinued 24 hours prior to and during collection of specimen. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Adjust urine pH to 1 to 5 with 50% acetic or HCl acid.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
Frozen 180 days

**CPT Code Information:** 83150-HVA; 84585-VMAR;

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**Vanillylmandelic Acid (VMA), 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: Administration of L-dopa may falsely-increase vanillylmandelic acid results; it should be discontinued 24 hours prior to and during collection of specimen. Supplies: Urine Tubes, 10 mL (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a 24-hour urine specimen. 2. Add 25 mL of 50% acetic acid as preservative at the start of collection. If specimen is refrigerated during collection, preservative may be added up to 12 hours after collection. Use 15 mL of 50% acetic acid for children <5 years old. This preservative is intended to achieve a pH of between approximately 1 and 5. If necessary, adjust urine pH to 1 to 5 with 50% acetic or HCl acid. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
Frozen 180 days

**CPT Code Information:** 84585

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**Vanillylmandelic Acid (VMA), Random, Urine**

**Specimen Requirements:** Container/Tube: Plastic, 10-mL urine tube (T068) Specimen Volume: 5 mL Collection Instructions: 1. Collect a random urine specimen. 2. Adjust the random urine pH to a level between 1 and 5 by adding 50% acetic acid dropwise and checking the pH. Additional Information: 1. Patient's age is required. 2. Administration of L-dopa may falsely increase vanillylmandelic acid results; it should be discontinued 24 hours prior to and during collection of specimen.

**Specimen Minimum Volume:** 2 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 28 days
Frozen 180 days

**CPT Code Information:** 84585
Varicella Zoster Virus (VZV) Immunostain, Technical Component Only

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient
(preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

Varicella-Zoster Antibody, IgG, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86787

Varicella-Zoster Antibody, IgM and IgG (Separate Determinations), Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.6 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

**CPT Code Information:** 86787-Varicella IgG; 86787-Varicella IgM;

Varicella-Zoster Virus (VZV) Antibody, IgM, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
**CPT Code Information:** 86787

**FVZGC** 58045  
**Varicella-Zoster Virus Antibody, IgG, CSF**  
**Specimen Requirements:** Collect 0.5 mL CSF in sterile plastic container and ship refrigerate.  
**Specimen Minimum Volume:** 0.3 mL  
**Transport Temperature:**  
- CSF Refrigerated (preferred) 14 days  
- Frozen 365 days  

**CPT Code Information:** 86787

**LVZV** 81241  
**Varicella-Zoster Virus, Molecular Detection, PCR**  
**Specimen Requirements:** Submit only 1 of the following specimens: Supplies: Aliquot Tube, 5 mL (T465) Specimen Type: Fluid Sources: Spinal, pleural, peritoneal, ascites, pericardial, amniotic, or ocular Container/Tube: Sterile container Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge. Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Specimen Type: Swab Sources: Miscellaneous: dermal, eye, nasal, or throat Container/Tube: Multimicrobe media (M4-RT) (T605) Collection Instructions: Place swab back into multimicrobe media (M4-RT [T605], M4, or M5). Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Specimen Type: Swab Sources: Genital: cervix, vagina, urethra, anal/rectal, or other genital sources Container/Tube: Multimicrobe media (M4-RT) (T605) Collection Instructions: Place swab back into multimicrobe media (M4-RT [T605], M4, or M5). Specimen Type: Fluid Sources: Respiratory: bronchial washing, bronchoalveolar lavage, nasopharyngeal aspirate or washing, sputum, or tracheal aspirate Container/Tube: Sterile container Specimen Volume: 1.5 mL Supplies: M4-RT (T605) Specimen Type: Tissue Sources: Brain, colon, kidney, liver, lung, etc. Container/Tube: Preferred: Multimicrobe media (M4-RT) (T605) Acceptable: Sterile container with 1 to 2 mL of sterile saline Specimen Volume: Entire collection Collection Instructions: Submit only fresh tissue in a sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT [T605], M4, or M5)  
**Specimen Minimum Volume:** Body Fluid, Ocular Fluid, or Spinal Fluid: 0.3 mL Respiratory Specimens: 1 mL Tissue: 2 x 2-mm biopsy  
**Transport Temperature:**  
- Varies Refrigerated (preferred) 7 days  
- Frozen 7 days  

**CPT Code Information:** 87798

**VEGF** 63019  
**Vascular Endothelial Growth Factor (VEGF), Plasma**  
**Specimen Requirements:** Collection Container/Tube: Lavender-top (EDTA) Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL Collection Instructions: 1. Immediately after drawing the specimen, place the tube on wet ice. 2. Spin down and separate plasma from cells; 1,500 x g for 10 minutes. 3. Freeze specimen within 30 minutes  
**Specimen Minimum Volume:** 0.3 mL
**Transport Temperature:**
Plasma EDTA Frozen (preferred) 21 days
Refrigerated 24 hours

**CPT Code Information:** 83520

**VIP**

Vasoactive Intestinal Polypeptide (VIP), Plasma

**Specimen Requirements:**
Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL
Collection Instructions: 1. Fasting (8 hours) 2. Spin down and immediately freeze. Additional Information: This test should not be requested on patients who have recently received radioactive material.

**Specimen Minimum Volume:** 0.55 mL

**Transport Temperature:**
Plasma EDTA Frozen 90 days

**CPT Code Information:** 84586

**VIPI**

Vasoactive Intestine Polypeptide (VIP), Immunostain Without Interpretation

**Specimen Requirements:**
Supplies: Immunostain Technical Only Envelope (T693)
Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693)
Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

**VDRLF**

VDRL, Spinal Fluid

**Specimen Requirements:**
Collection Container/Tube: Sterile vial Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
CSF Frozen (preferred) 14 days
Refrigerated 14 days

**CPT Code Information:** 86592
**VEDOZ 603025**

**Vedolizumab Quantitation with Antibodies, Serum**

**Specimen Requirements:** Patient Preparation: Nivolumab (Opdivo) must be discontinued at least 4 weeks prior to testing for vedolizumab quantitation in serum. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose (trough specimen). 2. Centrifuge within 2 hours of draw.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days

**CPT Code Information:** 80299; 82397;

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**VEDOL 602807**

**Vedolizumab Quantitation with Reflex to Antibodies, Serum**

**Specimen Requirements:** Patient Preparation: Nivolumab (Opdivo) must be discontinued at least 4 weeks prior to testing for vedolizumab quantitation in serum. Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1.5 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose (trough specimen). 2. Centrifuge within 2 hours of draw.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 28 days

**CPT Code Information:** 80299; 82397 (if appropriate);

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**VELV 82917**

**Velvet Leaf, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**VENLA 83732**

**Venlafaxine, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1 mL Collection Instructions: 1. Draw blood immediately before next scheduled dose. Serum drawn from patients 12 hours after an oral dose is appropriate. It is customary to treat the patient at bedtime with a dose, then, draw specimen the following morning prior to next dose. 2. Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 0.4 mL
Transport Temperature:
Serum Red Refrigerated (preferred) 14 days
  Ambient 14 days
  Frozen 14 days

CPT Code Information: 80299

**FBMBL**

57975

**Venom Bumble Bee (Bombus terrestrus) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
  Frozen 365 days
  Ambient 28 days

CPT Code Information: 86003

**FHOBG**

57714

**Venom Honey Bee IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
  Frozen 365 days
  Ambient 7 days

CPT Code Information: 86001

**FWFHG**

57799

**Venom W-F Hornet IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
  Frozen 365 days
  Ambient 7 days
**VLCZ 35571**

**Very Long Chain Acyl-CoA Dehydrogenase Deficiency, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper, or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood Spots on collection card (Whatman Protein Saver 903 Paper; Ahlstrom 226 filter paper; or Blood Spot Collection Card, T493) Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions. Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask Specimen Volume: 1 Full T-75 or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches, 3-mm diameter

**Transport Temperature:**
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81406-ACADV (acyl-CoA dehydrogenase, very long chain) (eg, very long chain acyl-coenzyme A dehydrogenase deficiency), full gene sequence

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**VHLE 37839**

**VHL Gene, Erythrocytosis Mutation Analysis**

**Specimen Requirements:** Only orderable as part of a profile. For more information see HEMP / Hereditary Erythrocytosis Mutations. This test is only available as a reflex from the HEMP / Hereditary Erythrocytosis Mutations. VHLE is not a single orderable test.

**Specimen Minimum Volume:** Blood: 1 mL

**Transport Temperature:**
- Ambient (preferred)
- Frozen
- Refrigerated

**CPT Code Information:** 81404-VHL (von Hippel-Lindau tumor suppressor) (eg, von Hippel-Lindau familial cancer syndrome), full gene sequence

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**VHLZ 37440**

**VHL Gene, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an
allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies

(Frozen)

Refrigerated

**CPT Code Information:** 81404-VHL (von Hippel-Lindau tumor suppressor) (eg, von Hippel-Lindau familial cancer syndrome), full gene sequence; 81403-VHL duplication/deletion;

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**VIBC 89658**

**Vibrio Culture, Stool**

**Specimen Requirements:** Specimen Type: Preserved stool Supplies: C and S Vial (T058) Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S [T058]) Specimen Volume: 1 gram or 5 mL (Representative portion of stool specimen) Collection Instructions: Collect fresh stool and submit in container with transport medium.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Fecal

(Ambient (preferred) 4 days

Refrigerated 4 days

**CPT Code Information:** 87046-Vibrio culture, stool; 87077-Identification by MALDI-TOF mass spec (if appropriate); 87077-Additional identification procedure (if appropriate); 87077-Bacterial identification (if appropriate); 87153-Aerobe identification by sequencing (if appropriate);

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**VIGA 91089**

**Vigabatrin (Sabril)**

**Specimen Requirements:** Submit only 1 of the following specimens Plasma Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 1 mL sodium heparin plasma refrigerated in a plastic vial. Serum Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 1 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**

Varies

Refrigerated (preferred) 14 days

Frozen 180 days

Ambient 72 hours

**CPT Code Information:** 80339
**VIM 70579**

**Vimentin (VIM) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
TECHONLY Ambient (preferred)
Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**VIRNR 87266**

**Viral Culture, Non-Respiratory**

**Specimen Requirements:** Specimen Type: Body fluid Sources: Pericardial, peritoneal, amniotic Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Lip Supplies: Swab, Sterile Polyester (T507) M4-RT (T605) Container/Tube: Multimicrobe media (M4-RT) (T605) Specimen Volume: Swab Collection Instructions: Place swab into multimicrobe media (M4-RT, M4, or M5). Specimen Type: Rectal Supplies: Swab, Sterile Polyester (T507) M4-RT (T605) Container/Tube: Multimicrobe media (M4-RT) (T605) Specimen Volume: Swab Collection Instructions: Place swab into multimicrobe media (M4-RT, M4, or M5). Specimen Type: Spinal fluid Container/Tube: Sterile Container/Tube: Sterile vial Specimen Volume: 1 mL Specimen Type: Stool Supplies: Stool Collection Kit, Random (T635) Container/Tube: Sterile container Specimen Volume: 5-10 g Specimen Type: Tissue Supplies: M4-RT (T605) Sources: Brain, colon, kidney, liver, etc. Container/Tube: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT, M4, or M5). Specimen Type: Whole collection Container/Tube: Sterile container Specimen Volume: 5-10 g Specimen Type: Dermal (for enterovirus only) Supplies: Swab, Sterile Polyester (T507) M4-RT (T605) Container/Tube: Multimicrobe media (M4-RT) (T605) Specimen Volume: Swab Collection Instructions: 1. Place swab in M4-RT media or other viral transport media (M4 or M5). 2. Clearly label "enterovirus" to ensure proper handling and test setup.

**Specimen Minimum Volume:** Body Fluid or Spinal Fluid: 1 mL Stool: 5 g Urine: 0.5 mL Tissue Biopsy: 5 mm

**Transport Temperature:** Varies Refrigerated 7 days

**CPT Code Information:** 87252-Viral culture, non-respiratory; 87176-Tissue processing (if appropriate); 87253-Additional testing virus, identification (if appropriate); 87254-Viral smear, shell vial (if appropriate);

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**VRESP 88926**

**Viral Culture, Respiratory**

**Specimen Requirements:** Specimen Type: Lower respiratory tract specimens such as bronchoalveolar lavage, bronchial washings or aspirates, tracheal aspirates or secretions, pleural fluid, nasal swab or washing or sputum Container/Tube: Sterile container Specimen Volume: 1 mL Specimen Type: Nasopharynx Supplies: Nasopharyngeal Swab (Rayon Mini-Tip swab) (T515) M4-RT (T605) Specimen Volume: Entire collection Collection Instructions: 1. Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells. 2. Place swab into M4-RT media or other viral transport media (M4 or M5). Specimen Type: Throat Supplies: Culturette (BBL Culture Swab) (T092) M4-RT (T605) Swab, Sterile Polyester (T507) Container/Tube: Multimicrobe media (M4-RT) (T605) Preferred: BBL CultureSwab (T092) Acceptable: Dacron-tipped swab with plastic handle (T507)

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Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
Specimen Volume: Swab Collection Instructions: Place swab into multimicrobe media (M4-RT, M4, or M5). Specimen Type: Tissue Supplies: M4-RT (T605) Sources: Lung and others Container/Tube: Sterile container containing 1 mL to 2 mL of sterile saline or multimicrobe medium (M4-RT, M4, or M5).
Specimen Volume: Entire collection Specimen Type: Oral Supplies: Swab, Sterile Polyester (T507) M4-RT (T605) Container/Tube: Dacron-tipped swab with plastic handle (T507) Specimen Volume: Swab Collection Instructions: Place swab into multimicrobe media (M4-RT, M4, or M5).

**Specimen Minimum Volume:** See Specimen Required

**Transport Temperature:**
Varies Refrigerated 7 days

**CPT Code Information:** 87252-Tissue culture inoculation; 87176-Tissue processing (if appropriate); 87253-Additional testing virus, identification (if appropriate); 87254-Viral smear, shell vial (if appropriate);

**SVIR**

**Viral Smear, Shell Vial (Bill Only)**

**Specimen Requirements:** This test is for Billing Purposes Only. This is not an orderable test.

**Transport Temperature:**
Varies

**CPT Code Information:** 87254

**VISCS**

**Viscosity, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 1.5 mL Collection Instructions: Keep specimen at $37^\circ\text{C}$ (eg, $37^\circ\text{C}$ Thermopak, heat block) until after centrifugation and separation of cells.

**Specimen Minimum Volume:** 0.65 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 14 days

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**CPT Code Information:** 85810

**VAE**

**Vitamin A and Vitamin E, Serum**

**Specimen Requirements:** Patient Preparation: Fasting overnight (12-14 hours) (infants-draw prior to next feeding). Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Amber vial (T192) Specimen Volume: 1 mL Collection Instructions: Send specimen in amber vial to protect from light within 24 hours.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Varies 14 days
Vitamin A, Serum

**Specimen Requirements:** Patient Preparation: Fasting overnight (12-14 hours) (infants: draw prior to next feeding). Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  14 days
- Ambient  14 days
- Frozen  14 days

**CPT Code Information:** 84590

Vitamin B12 and Folate, Serum

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 1 mL Collection Instructions: Fasting (8 hours) Additional Information: Do not order on patients who have recently received methotrexate or other folic acid antagonist.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  7 days
- Frozen  90 days

**CPT Code Information:** 82607-Vitamin B12; 82746-Folate;

Vitamin B12 Assay, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.6 mL Collection Instructions: 1. Serum gel tubes should be centrifuged within 2 hours of collection. 2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred)  7 days
- Frozen  90 days

**CPT Code Information:** 82607

Vitamin B12 Binding Capacity

**Specimen Requirements:** Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 1 mL of serum refrigerated in a plastic vial. Note: Patient should fast for 12 hours.

**CPT Code Information:** 84446-Vitamin E; 84590-Vitamin A;
hours prior to collection. Vitamin B12 supplements should not be administered within 72 hours of
drawing blood for this test.

**Specimen Minimum Volume:** 0.1 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 7 days
  - Frozen 30 days
  - Ambient 6 hours

**CPT Code Information:** 82608

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### FNIAC

**Vitamin B3 Niacin in Plasma**

**Specimen Requirements:** Specimen Type: Plasma Container/Tube: EDTA Specimen Volume: 4 mL Collection Instructions: Draw sufficient blood in a lavender-top (EDTA) tube(s). Spin down and transfer to a plastic Amber vial (T192) to protect from light within 30 minutes of collection. Freeze and send 4 mL EDTA plasma frozen on dry ice.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Plasma EDTA Frozen (preferred) 56 days
  - Refrigerated 48 hours

**CPT Code Information:** 84591

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### FPAB

**Vitamin B5 (Pantothenic Acid) Bioassay**

**Specimen Requirements:** Draw blood in a SST (serum separator tube). Spin down and transfer to plastic Amber vial (T192) to protect from light. Send 1 mL serum frozen.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum SST Frozen (preferred) 21 days
  - Refrigerated 7 days

**CPT Code Information:** 84591

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### B6PRO

**Vitamin B6 Profile (PLP and PA), Plasma**

**Specimen Requirements:** Patient Preparation: 1. Fasting-overnight (12-14 hours) (infants-draw prior to next feeding). 2. Patient must not ingest vitamin supplements for 24 hours before the specimen is drawn. Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube; Green top (sodium or lithium heparin) Submission Container/Tube; Amber vial (T192) Specimen Volume: 1 mL Collection Instructions: Centrifuge at 4°C, 1/2, then aliquot all plasma into amber vial.

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Plasma Heparin Refrigerated (preferred) 7 days
Frozen 14 days

**CPT Code Information:** 82542-Quantitative; 84207-Pyridoxal phosphate (vitamin B6);

**FBIOT 91902**  
**Vitamin B7, H (Biotin)**

**Specimen Requirements:** Specimen Type: Serum Container/Tube: Red or SST Specimen Volume: 2 mL Collection Instructions: Draw blood in a plain, no additive red-top tube(s) or serum gel tube(s). Spin down and send 2 mL serum frozen in amber vial (T192) to protect from light.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
- Serum Frozen 14 days

**CPT Code Information:** 84591

**VITE 42358**  
**Vitamin E, Serum**

**Specimen Requirements:** Patient Preparation: Fasting overnight (12-14 hours) (infants-draw prior to next feeding). Supplies: Amber Frosted Tube, 5 mL (T192) Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Amber vial (T192) Specimen Volume: 0.5 mL Collection Instructions: Send specimen in amber vial to protect from light within 24 hours.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** 84446

**VITK1 42364**  
**Vitamin K1, Serum**

**Specimen Requirements:** Collection Container/Tube: Preferred: Red top Acceptable: Serum gel Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: Fasting overnight (12-14 hours) (infants-draw prior to next feeding).

**Specimen Minimum Volume:** 0.75 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 30 days
- Ambient 30 days
- Frozen 30 days

**CPT Code Information:** 84597

**VLTB 89190**  
**Volatile Screen, Blood**

**Specimen Requirements:** Container/Tube: Preferred: Grey top (potassium oxalate/sodium
fluoride) Acceptable: Any anticoagulant Specimen Volume: 1 mL Collection Instructions: Do not use alcohol to clean arm. Use alternatives such as Betadine to cleanse arm before collecting any specimen for volatile testing.

**Specimen Minimum Volume:** 0.5 mL or amount to fill 1 tube

**Transport Temperature:**
Whole blood Refrigerated (preferred) 72 hours

- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);

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**VLTBX
62745**

**Volatile Screen, Chain of Custody, Blood**

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) Container/Tube: Chain-of-Custody Kit (T282) containing the specimen container seals and documentation required. Preferred: Grey top (potassium oxalate/sodium fluoride) Acceptable: Any anticoagulant Specimen Volume: 1 mL Collection Instructions: 1. Do not use alcohol to clean arm. Use alternative such as Betadine to cleanse arm before collecting any specimen for volatile testing. 2. Specimen must be sent in original tube. Collect specimen, seal, and submit with the associated documentation to satisfy the legal requirements for chain of custody testing.

**Specimen Minimum Volume:** 0.5 mL or amount to fill 1 tube

**Transport Temperature:**
Whole blood Refrigerated (preferred) 72 hours

- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);

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**VLTUX
62746**

**Volatile Screen, Chain of Custody, Urine**

**Specimen Requirements:** Supplies: Chain-of-Custody Kit (T282) Container/Tube: Chain-of-Custody Kit (T282) containing the specimen containers, seals, and documentation required. Specimen Volume: 10 mL Collection Instructions: Collect specimen in the container provided, seal, and submit with the associated documentation to satisfy the legal requirements for chain of custody testing. Additional Information: 1. If urine creatinine is required or adulteration of the sample is suspected, the following test should be requested, ADLTX / Adulterants Survey, Chain of Custody, Urine. For additional information, refer to ADLTX / Adulterants Survey, Chain of Custody, Urine. 2. Submitting less than 20 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 72 hours

- Frozen 14 days
- Ambient 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);
Volatile Screen, Serum

**Specimen Requirements:** Ethylene glycol requires a separate request. See ETGL / Ethylene Glycol, Serum. Submit only 1 of the following specimens: Preferred: Container/Tube: Serum gel
Specimen Volume: Full tube Collection Instructions: 1. Arm must be cleansed with water only. 2. Avoid exposure of specimen to atmosphere. 3. Do not aliquot. Acceptable: Container/Tube: Red top Specimen Volume: Full tube Collection Instructions: 1. Arm must be cleansed with water only. 2. Avoid exposure of specimen to atmosphere. 3. Centrifuge specimen within 2 hours of draw and send serum aliquot to laboratory refrigerated.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 72 hours

- Frozen: 14 days
- Ambient: 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);

Volatile Screen, Urine

**Specimen Requirements:** Supplies: Plastic, 10-mL urine tube (T068) Specimen Volume: 10 mL Collection Instructions: 1. Collect a random urine specimen. 2. No preservative. Additional Information: Submitting less than 10 mL will compromise our ability to perform all necessary testing.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Urine Refrigerated (preferred) 72 hours

- Frozen: 14 days
- Ambient: 24 hours

**CPT Code Information:** 80320; G0480 (if appropriate);

von Willebrand Disease 2N (Subtype Normandy), Blood

**Specimen Requirements:** Container/Tube: Preferred: Yellow top (ACD solution A or B) Acceptable: EDTA, sodium citrate Specimen Volume: Full tube Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Additional Information: If F8A / Coagulation Factor VIII Activity Assay, Plasma; VWAG / von Willebrand Factor Antigen, Plasma; and/or RIST / Ristocetin Cofactor, Plasma have been previously performed on the patient, include results of these tests when submitting specimen for testing.

**Specimen Minimum Volume:** 1 mL of blood in 3-mL ACD tube

**Transport Temperature:**
Whole blood Ambient (preferred)
Refrigerated
**VWFX**

von Willebrand Factor Activity, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma. Collection Container/Tube: Light-blue top (citrate). Submission Container/Tube: Polypropylene vial. Specimen Volume: 2 mL in 2 vials each containing 1 mL. Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze specimens immediately at < or =-40 degrees C, if possible. 4. Send specimens in the same shipping container. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 89792

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**VWAG**

von Willebrand Factor Antigen, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Specimen Type: Platelet-poor plasma. Collection Container/Tube: Light-blue top (citrate). Submission Container/Tube: Plastic vial. Specimen Volume: 1 mL. Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze specimen immediately at < or =-40 degrees C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 14 days

**CPT Code Information:** 85246

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**VWFM2**

von Willebrand Factor Multimer Analysis, Plasma

**Specimen Requirements:** See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Fasting preferred. Specimen should be drawn prior to coagulation factor replacement therapy. Collection Container/Tube: Light-blue top (citrate). Submission Container/Tube: Plastic vials. Specimen Volume: 1 mL in 2 plastic vials each containing 0.5 mL. Collection Instructions: 1. Spin down, remove plasma, and spin plasma again. 2. Freeze plasma immediately (no longer than 4 hours after collection) at -20 degrees C or, ideally, < or =-40 degrees C. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. Each coagulation assay requested should have its own vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Plasma Na Cit Frozen 42 days

**CPT Code Information:** 89792

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Current as of January 8, 2019 2:39 am CST  800-533-1710 or 507-266-5700 or mayocliniclabs.com
von Willebrand Profile

Specimen Requirements: See Coagulation Studies in Special Instructions: Guidelines for Specimen Handling and Processing. Patient Preparation: Patient should not be receiving anticoagulant treatment (eg, heparin, Coumadin). If so, please note. Specimen Type: Platelet-poor plasma Collection Container/Tube: Light-blue top (citrate) Submission Container/Tube: Plastic vials Specimen Volume: 3 mL in 3 plastic vials each containing 1 mL Collection Instructions: 1. Specimen must be drawn prior to factor replacement therapy. 2. Spin down, remove plasma, and spin plasma again. 3. Freeze specimen aliquots immediately at or below -40°C, if possible. Additional Information: 1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results. 2. If priority specimen, mark request form, give reason, and request a call-back. 3. Each coagulation assay requested should have its own vial. 4. If multiple coagulation profiles are ordered, each profile must be on a separate order.

Specimen Minimum Volume: 2 plastic vials each containing 1 mL

Transport Temperature:
Plasma Na Cit Frozen 14 days

CPT Code Information: 85240-Coagulation factor VIII assay; 85246-von Willebrand factor antigen; 85397-von Willebrand factor activity; 85245-von Willebrand factor ristocetin cofactor activity (if appropriate); 85247-von Willebrand factor multimer (if appropriate); 85335-Bethesda titer (if appropriate); 85390-26-Special coagulation interpretation (if appropriate);

Voriconazole

Specimen Requirements: Container/Tube: Agar slant or other appropriate media Specimen Volume: Organism in pure culture Complete and submit with specimen: 1. Fungus Testing Lab request form Collection Instructions: Organism must be in pure culture, actively growing. Place specimen in a large infectious container (T146) and label as etiologic agent/infectious substance.

Transport Temperature:
Varies Ambient

CPT Code Information: 87188 - mould - MIC microdilution or agar dilution (if appropriate); 87186 - yeast - MIC microdilution or agar dilution (if appropriate);

Voriconazole, Serum

Specimen Requirements: Collection Container/Tube: Red top Submission Container/Tube: Plastic vial Specimen Volume: 2 mL Collection Instructions: Spin down within 2 hours of draw.

Specimen Minimum Volume: 0.6 mL

Transport Temperature:
Serum Red Refrigerated (preferred) 28 days
Ambient 28 days
Frozen 28 days
CPT Code Information: 80299

FWALP 57561  Wall Eyed Pike (Sander vitreus)(Stizostedium vitreum) IgE
Specimen Requirements: Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred)  28 days
    Frozen  365 days
    Ambient  28 days

CPT Code Information: 86003

FWALG 57640  Walnut Food (Juglans spp) IgG
Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.
Specimen Minimum Volume: 0.5 mL
Transport Temperature:
Serum Refrigerated (preferred)  28 days
    Frozen  365 days
    Ambient  7 days

CPT Code Information: 86001

WALN 82732  Walnut Tree, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space
Transport Temperature:
Serum Refrigerated (preferred)  14 days
    Frozen  90 days

CPT Code Information: 86003

BLW 82898  Walnut-Food, IgE
Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL, dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**WARSV**

**Warfarin Response Genotype**

**Specimen Requirements:** Multiple genotype tests can be performed on a single specimen after a single extraction. See Multiple Genotype Test List in Special Instructions for a list of tests that can be ordered together. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Saliva Patient Preparation: Patient should not eat, drink smoke, or chew gum 30 minutes prior to collection. Supplies: Saliva Swab Collection Kit (T786) Specimen Volume: 1 swab Collection Instructions: Collect and send specimen per kit instructions. Specimen Stability Information: Ambient Specimen Type: DNA Container/Tube: 2 mL screw top tube Specimen Volume: 100 mcL (microliters) Collection Instructions: 1. The preferred volume is 100 mcL at a concentration of 50 ng/mcL. 2. Include concentration and volume on tube. Specimen Stability Information: Frozen (preferred)/Ambient/Refrigerated

**Specimen Minimum Volume:** Blood: 0.4 mL Saliva: 1 swab

**Transport Temperature:**
Varies

**CPT Code Information:** 0030U

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**WRF**

**Warfarin, Serum**

**Specimen Requirements:** Container/Tube: Red top Specimen Volume: 3 mL Collection Instructions: Spin down within 2 hours of draw.

**Specimen Minimum Volume:** 1.1 mL

**Transport Temperature:**
Serum Red Refrigerated (preferred) 21 days
Ambient 28 days
Frozen 28 days

**CPT Code Information:** 80299

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**WSPV**

**Wasp Venom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**FWATG**

Watermelon IgG

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 7 days

CPT Code Information: 86001

**WMEL**

Watermelon, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days

CPT Code Information: 86003

**WEED1**

Weed Panel # 1

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

Specimen Minimum Volume: 0.3 mL

Transport Temperature:
Serum Refrigerated (preferred) 14 days
Frozen 90 days
CPT Code Information: 86003

**WEED2**

**Weed Panel # 2**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**WEED3**

**Weed Panel # 3**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**WEED4**

**Weed Panel # 4**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL Additional Information: See Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

CPT Code Information: 86003

**WNVCI**

**West Nile CSF Interpretation**

**Specimen Requirements:** Only orderable as part of a profile. See WNC / West Nile Virus Antibody, IgG and IgM, Spinal Fluid.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 30 days
West Nile Serum Interpretation

**Specimen Requirements:** Only orderable as part of a profile. For more information see WNS / West Nile Virus Antibody, IgG and IgM, Serum.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

West Nile Virus (WNV), Molecular Detection, PCR, Plasma

**Specimen Requirements:** Collection Container/Tube: Lavender top (EDTA) Submission Container/Tube: Screw-capped, sterile container Specimen Volume: 1 mL Collection Instructions: Spin down promptly

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Plasma EDTA Refrigerated (preferred) 7 days
- Frozen 7 days

**CPT Code Information:** 87798

West Nile Virus Antibody, IgG and IgM, Serum

**Specimen Requirements:** Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

**CPT Code Information:** IgG-86789; IgM-86788;

West Nile Virus Antibody, IgG and IgM, Spinal Fluid

**Specimen Requirements:** Supplies: Aliquot Tube, 5 mL (T465) Collection Container/Tube: Sterile vial Submission Container/Tube: Plastic, 5-mL aliquot tube (T465) Specimen Volume: 1 mL

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 30 days
West Nile Virus Antibody, IgG, Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see WNS / West Nile Virus Antibody, IgG and IgM, Serum.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

West Nile Virus Antibody, IgG, Spinal Fluid

**Specimen Requirements:** Only orderable as part of a profile. See WNC / West Nile Virus Antibody, IgG and IgM, Spinal Fluid.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
- CSF Refrigerated (preferred) 7 days
- Frozen 30 days

West Nile Virus Antibody, IgM, Serum

**Specimen Requirements:** Only orderable as part of a profile. For more information see WNS / West Nile Virus Antibody, IgG and IgM, Serum.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 14 days

West Nile Virus Antibody, IgM, Spinal Fluid

**Specimen Requirements:** Only orderable as part of a profile. See WNC / West Nile Virus Antibody, IgG and IgM, Spinal Fluid.

**Specimen Minimum Volume:** 0.8 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 7 days
Frozen 30 days

CPT Code Information: 86788

**LCWNV 86197**  
West Nile Virus, Molecular Detection, PCR, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL Collection Instructions: Do not centrifuge.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87798

**WEEPC 83918**  
Western Equine Encephalitis Antibody Panel, IgG and IgM, Spinal Fluid

**Specimen Requirements:** Container/Tube: Sterile vial Specimen Volume: 0.5 mL Additional Information: This test is not available for specimens originating in New York.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
CSF Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86654 x 2

**WEEP 83156**  
Western Equine Encephalitis Antibody, IgG and IgM, Serum

**Specimen Requirements:** Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 0.5 mL

**Specimen Minimum Volume:** 0.15 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 14 days

CPT Code Information: 86654 x 2

**WRW 82666**  
Western Ragweed, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens
from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL × number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**FHWHTG 57553**

**Wheat IgG**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**FWHG4 57570**

**Wheat IgG4**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86001

**WHT 82686**

**Wheat, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL × number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days
**FWHGY 5757**

**Whey IgG**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
- Frozen 365 days
- Ambient 7 days

**CPT Code Information:** 86003

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**WHEY 82622**

**Whey, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86001

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**ASHW 82730**

**White Ash, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**BENW 82726**

**White Bean, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**WFHV**

**White Faced Hornet Venom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**WHIC**

**White Hickory, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**WPIN**

**White Pine, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: \((0.05 \text{ mL} \times \text{number of allergens}) + 0.25 \text{ mL dead space}\)

**Transport Temperature:**
White Potato, IgE

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL: For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

Whitefish IgE

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.6 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

**CPT Code Information:** 86003

Whole Exome Sequencing

**Specimen Requirements:** Samples from both biological parents and the patient are required. Each specimen must have a separate order for WES / Whole Exome Sequencing. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. 3. Label the parental samples with full name and date of birth. Do not label the parental samples with the child's name. Additional Information: To ensure minimum volume and concentration of DNA is met, the preferred volume of blood must be submitted. Testing may be canceled if DNA requirements are inadequate.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Varies Ambient (preferred)
Frozen
Refrigerated

**CPT Code Information:** Codes Applied to Proband Sample: 81415; 81416 x 2;

**WRGR**

*Wild Rye Grass, IgE*

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**WSLK**

*Wild Silk, IgE*

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**WS7F**

*Williams Syndrome, 7q11.23 Deletion, FISH*

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Preferred: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 5 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Acceptable: Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20-25 mL Collection Instructions: 1. Optimal timing for specimen collection is during 14 to 18 weeks of gestation, but specimens collected at other weeks of gestation are also accepted. Provide gestational age at the time of amniocentesis. 2. Discard the first 2 mL of amniotic fluid. Additional Information: 1. Place the tubes in a Styrofoam container (T329). 2. Fill remaining space with packing material. 3. Unavoidably, about 1% to 2% of mailed-in specimens are not viable. 4. Bloody specimens are undesirable. 5. If the specimen does not grow in culture, you will be notified within 7 days of receipt. 6. Results will be reported and also telephoned or faxed, if requested. Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing

Current as of January 8, 2019 2:39 am CST 800-533-1710 or 507-266-5700 or mayocliniclabs.com
15 mL of transport medium Specimen Volume: 20-30 mg Collection Instructions: 1. Collect specimen by the transabdominal or transcervical method. 2. Transfer chorionic villi to Petri dish containing transport medium (T095). 3. Using a stereomicroscope and sterile forceps, assess the quality and quantity of the villi and remove any blood clots and maternal decidua. Specimen Type: Skin biopsy Container/Tube: Sterile container with sterile Hank’s balanced salt solution (T132), Ringer's solution, or normal saline Specimen Volume: 4 mm diameter Collection Instructions: 1. Wash biopsy site with an antiseptic soap. 2. Thoroughly rinse area with sterile water. 3. Do not use alcohol or iodine preparations. 4. A local anesthetic may be used. 5. Biopsy specimens are best taken by punch biopsy to include full thickness of dermis.

**Specimen Minimum Volume:** Amniotic Fluid: 5 mL/Blood: 2 mL/Chorionic Villi: 5 mg

**Transport Temperature:**

- Varies
- Refrigerated (preferred)
- Ambient

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88273 w/modifier 52-Chromosomal in situ hybridization, less than 10 cells (if appropriate); 88273-Chromosomal in situ hybridization, 10-30 cells (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate); 

**WILL**

**82731 Willow, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

**WT1I**

**70582 Wilms Tumor (WT-1) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Container/Tube: Immunostain Technical Only Envelope (T693) Preferred: 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick. Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**

- TECHONLY Ambient (preferred)
- Refrigerated
Wilson Disease, Full Gene Analysis

Specimen Requirements: Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

Specimen Minimum Volume: 1 mL

Transport Temperature:
Varies Ambient (preferred)
Frozen
Refrigerated

CPT Code Information: 81406-ATP7B (ATPase, Cu++ transporting, beta polypeptide) (eg, Wilson disease), full gene sequence

Wingscale (Atriplex Canescens) IgE

Specimen Requirements: Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

Specimen Minimum Volume: 0.5 mL

Transport Temperature:
Serum Refrigerated (preferred) 28 days
Frozen 365 days
Ambient 28 days

CPT Code Information: 86003

Wisconsin Newborn Screen, Blood Spot

Specimen Minimum Volume: WINS: 4 blood spots; LDALD: 1 blood spot

Transport Temperature:
Whole blood Ambient (preferred) 365 days
Frozen 365 days
Refrigerated 365 days

CPT Code Information: S3620

Wormwood, IgE

Specimen Requirements: Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
Serum Refrigerated (preferred) 14 days
Frozen 90 days

**CPT Code Information:** 86003

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**BUCCF 35261**

**X and Y Aneuploidy Detection, Buccal Smear, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not delay or reject testing if this information is not provided, but appropriate testing and interpretation may be compromised. Container/Tube: Buccal Smear Collection Kit (T543) Specimen Volume: 2 Cyto-Pak brushes

**Collection Instructions:** 1. Patient should rinse out mouth vigorously with mouthwash followed by water for approximately 15 seconds. Mouthwash is not a requirement but helps reduce the bacteria found in the mouth that may hinder testing. 2. Remove the Cyto-Pak brush from the container only touching the “stick” end. Save the container. 3. Using medium pressure, rotate the brush several times on the inside of the cheek. 4. Return brush to container and cap. 5. Repeat steps 2 through 4 on the other cheek using the second brush. 6. It is important that the patient's buccal cells are not contaminated with cells from any other source. Do not touch the bristles. Do not brush too vigorously. If blood appears, discard the brush and restart the collection process. 7. Label each container with patient's name and order number or hospital/clinic number. Additional Information: 1. Provide appropriate clinical information about the patient as per specific test requirements. 2. It is important that the cells do not dry out during shipping. Ensure that the container is tightly sealed.

**Specimen Minimum Volume:** 2 Cyto-Pak brushes

**Transport Temperature:**
Buccal Swab Ambient (preferred)
Refrigerated

**CPT Code Information:** 88271x2, 88291 "DNA probe, each (first probe set), Interpretation and report; 88271x2 "DNA probe, each; each additional probe set (if appropriate); 88271x1 "DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 "DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 "DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 "Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 "Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate) ; 88275 "Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**XALDZ 35575**

**X-Linked Adrenoleukodystrophy, Full Gene Analysis**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Preferred: Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Specimen Type: Cultured fibroblasts Container/Tube: T-75 or T-25 flask
Specimen Volume: 1 full T-75 flask or 2 full T-25 flasks Specimen Stability Information: Ambient (preferred)/Refrigerated <24 hours Specimen Type: Skin biopsy Container/Tube: Sterile container with any standard cell culture media (eg, minimal essential media, RPMI 1640). The solution should be supplemented with 1% penicillin and streptomycin. Tubes can be supplied upon request (Eagle's minimum essential medium with 1% penicillin and streptomycin [T115]). Specimen Volume: 4-mm punch Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Blood spot Supplies: Card - Blood Spot Collection (Filter Paper) (T493) Container/Tube: Preferred: Collection card (Whatman Protein Saver 903 Paper) Acceptable: Ahlstrom 226 filter paper or Blood Spot Collection Card (T493) Specimen Volume: 2 to 5 Blood spots on collection card Collection Instructions: 1. An alternative blood collection option for a patient >1 year of age is finger stick. 2. Let blood dry on the filter paper at ambient temperature in a horizontal position for 3 hours. 3. Do not expose specimen to heat or direct sunlight. 4. Do not stack wet specimens. 5. Keep specimen dry. Specimen Stability Information: Ambient (preferred)/Refrigerated Additional Information: 1. For collection instructions in Spanish, see Blood Spot Collection Card-Spanish Instructions (T777) in Special Instructions. 2. For collection instructions in Chinese, see Blood Spot Collection Card-Chinese Instructions (T800) in Special Instructions.

**Specimen Minimum Volume:** Blood: 1 mL Blood Spots: 5 punches-3 mm diameter

**Transport Temperature:**

Varies

**CPT Code Information:** 81405-ABCD1 (ATP-binding cassette, sub-family D [ALD] member 1) (eg, adrenoleukodystrophy) full gene sequence; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate);

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**XHIM**

**82964**

**X-Linked Hyper IgM Syndrome, Blood**

**Specimen Requirements:** For serial monitoring, we recommend that specimen draws be performed at the same time of day. Container/Tube: Green top (sodium heparin) Specimen Volume: 4 mL Collection Instructions: 1. Send specimen in original tube. Do not aliquot. 2. Specimens received more than 72 hours after collection will be rejected and the assay will not be performed.

**Specimen Minimum Volume:** 1.2 mL

**Transport Temperature:**

WB Sodium Heparin Ambient 72 hours

**CPT Code Information:** 88184-Flow cytometry, cell surface, cytoplasmic; 88185 x 6-Each additional marker;

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**BMTF**

**35259**

**XX/XY in Opposite Sex Bone Marrow Transplantation, FISH**

**Specimen Requirements:** Provide a reason for referral with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed. Advise Express Mail or equivalent if not on courier service. Submit only 1 of the following specimens: Specimen Type: Blood Container/Tube: Green top (sodium heparin) Specimen Volume: 7-10 mL Collection Instructions: 1. Invert several times to mix blood. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells. Specimen Type: Bone marrow Container/Tube: Green top (sodium heparin) Specimen Volume: 1-2 mL Collection Instructions: 1. Invert several times to mix bone marrow. 2. Other anticoagulants are not recommended and are harmful to the viability of the cells.

**Specimen Minimum Volume:** Blood: 2 mL/Bone Marrow: 1 mL
**Transport Temperature:**

Varies Ambient  
(preferred)  
Refrigerated

**CPT Code Information:** 88271x2, 88291 – DNA probe, each (first probe set), Interpretation and report; 88271x2 â€“ DNA probe, each; each additional probe set (if appropriate); 88271x1 â€“ DNA probe, each; coverage for sets containing 3 probes (if appropriate); 88271x2 â€“ DNA probe, each; coverage for sets containing 4 probes (if appropriate); 88271x3 â€“ DNA probe, each; coverage for sets containing 5 probes (if appropriate); 88274 w/modifier 52 â€“ Interphase in situ hybridization, <25 cells, each probe set (if appropriate); 88274 â€“ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate); 88275 â€“ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate);

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**Y Chromosome Microdeletions, Molecular Detection**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Specimen Type: Whole blood Container/Tube: Preferred: Lavender top (EDTA) or yellow top (ACD) Acceptable: Any anticoagulant Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**

Varies Ambient  
(preferred)  
Frozen  
Refrigerated

**CPT Code Information:** 81403-DAZ/SRY (deleted in azoospermia and sex determining region Y) (eg, male infertility), common deletions (eg, AZFa, AZFb, AZFc, AZFd)

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**Yellow Faced Hornet Venom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**

Serum Refrigerated (preferred) 14 days  
Frozen 90 days

**CPT Code Information:** 86003

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**Yellow Jacket Venom, IgE**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen
Volume: 0.5 mL for each 5 allergens requested Additional Information: Designate specific allergens from the list in Allergens-IgE Antibodies in Special Instructions.

**Specimen Minimum Volume:** For 1 allergen: 0.3 mL; For more than 1 allergen: (0.05 mL x number of allergens) + 0.25 mL dead space

**Transport Temperature:**
- Serum Refrigerated (preferred) 14 days
- Frozen 90 days

**CPT Code Information:** 86003

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**YAP1**

**70583**

**Yes-Associated Protein (YAP) Immunostain, Technical Component Only**

**Specimen Requirements:** Supplies: Immunostain Technical Only Envelope (T693) Specimen Type: Tissue Preferred: 2 Unstained, positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick Acceptable: Formalin-fixed, paraffin-embedded (FFPE) tissue block

**Transport Temperature:**
- TECHONLY Ambient (preferred)
- Refrigerated

**CPT Code Information:** 88342-TC, primary; 88341-TC, if additional IHC;

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**FYABS**

**57847**

**Yo Antibody Screen with Reflex to Titer and Western Blot**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum ambient in a plastic vial. Note: Overnight fasting is preferred.

**Specimen Minimum Volume:** 0.2 mL

**Transport Temperature:**
- Serum Ambient (preferred) 7 days
  - Frozen 21 days
  - Refrigerated 14 days

**CPT Code Information:** 86255 â€“ Screen; 84181 â€“ Western Blot with interpretation and report (if appropriate); 86256 â€“ Titer, each antibody (if appropriate);

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**FYOG**

**57915**

**Yogurt (Lactobacillus bulgaricus) IgE**

**Specimen Requirements:** Draw blood in a plain red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
CPT Code Information: 86003

MZIKV
65275
Zika Virus IgM Antibody Capture MAC-ELISA, Serum
Specimen Requirements: Container/Tube: Preferred: Serum gel Acceptable: Red top Specimen Volume: 2.5 mL
Specimen Minimum Volume: 2 mL
Transport Temperature:
Serum Frozen 30 days

CPT Code Information: 86794

RZIKU
65182
Zika Virus, PCR, Molecular Detection, Random, Urine
Specimen Requirements: Container/Tube: Sterile container Specimen Volume: 1 mL Collection Instructions: 1. Collect random urine in a sterile container. 2. Label specimen as urine.
Specimen Minimum Volume: 0.3 mL
Transport Temperature:
Urine Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87662

RZIKS
65181
Zika Virus, PCR, Molecular Detection, Serum
Specimen Requirements: Collection Container/Tube: Preferred: Serum gel Acceptable: Red top Submission Container: Sterile container Specimen Volume: 0.5 mL Collection Instructions: 1. Collect whole blood in a serum gel tube. 2. Centrifuge and aliquot the serum into a sterile container within 6 hours of collection. 3. Label specimen as serum.
Specimen Minimum Volume: 0.25 mL
Transport Temperature:
Serum Refrigerated (preferred) 7 days
Frozen 7 days

CPT Code Information: 87662

NEZPP
89375
Zinc Protoporphyrin, Blood
Specimen Requirements: Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Metal Free B-D Tube (EDTA), 6 mL (T183) Metal Free (Lead only) EDTA Tube, 3 mL (T615) Microtainer (EDTA) Tube,
0.5 mL (T174) If ordering the EDTA trace element Vacutainer tube from BD, order catalog #368381. Container/Tube: Preferred: Royal blue-top BD Vacutainer Plus with EDTA blood collection tube (T183) Acceptable: Tan-top (lead only) BD Vacutainer Plus with EDTA blood collection tube (T615) or BD Microtainer with EDTA (T174) or royal blue-top Monoject trace element blood collection tube Specimen Volume: 1 mL Collection Instructions: 1. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. 2. Send specimen in original tube.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
Whole blood  Refrigerated 28 days

**CPT Code Information:** 84202

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**EZNT8**

**Zinc Transporter 8 (ZnT8) Antibody, Serum**

**Specimen Requirements:** Container/Tube: Preferred: Red top Acceptable: Serum gel Specimen Volume: 2 mL

**Specimen Minimum Volume:** 1 mL

**Transport Temperature:**
Serum  Refrigerated (preferred)  28 days

   Frozen  28 days

   Ambient  72 hours

**CPT Code Information:** 86341

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**ZNU**

**Zinc, 24 Hour, Urine**

**Specimen Requirements:** Patient Preparation: High concentrations of barium are known to interfere with this test. If barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert Submission Container/Tube: Plastic urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 10 mL Collection Instructions: 1. Collect urine for 24 hours. 2. Refrigerate specimen within 4 hours of completion of 24-hour collection. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions. Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

**Specimen Minimum Volume:** 0.4 mL

**Transport Temperature:**
Urine  Refrigerated (preferred)  28 days

Ambient  28 days

Frozen  28 days

**CPT Code Information:** 84630

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**FZRBC**

**Zinc, Red Blood Cell**

**CPT Code Information:**
Specimen Requirements: Collect whole blood from a metal free EDTA (royal blue top) tube. Spin down and separate plasma and red blood cells immediately. Ship 2 mL plasma and 2 mL RBC in metal free tubes, refrigerate. Note: Both plasma and RBCs are required for testing.

Specimen Minimum Volume: 0.1 mL

Transport Temperature:
- Metal Free EDTA Plasma: Refrigerated 5 days
- RBCS: Refrigerated 5 days

CPT Code Information: 84630

Zinc, Serum

Specimen Requirements: Patient Preparation: High concentrations of gadolinium, iodine, and barium are known to interfere with most metals tests. If gadolinium-, iodine-, or barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: -Metal Free B-D Tube (No Additive), 6 mL (T184) -Metal Free Specimen Vial (T173) Collection Container/Tube: 6-mL Plain, royal blue-top Vacutainer plastic trace element blood collection tube (T184) Submission Container/Tube: 7-mL Mayo metal-free, screw-capped, polypropylene vial (T173) Specimen Volume: 0.8 mL Collection Instructions: 1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction. Serum must be removed from cellular fraction within 4 hours of specimen collection. Avoid hemolysis. 2. Remove the stopper. Carefully pour specimen into a Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer. 3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

Specimen Minimum Volume: 0.2 mL

Transport Temperature:
- Serum: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days

CPT Code Information: 84630

Zinc/Creatinine Ratio, Random, Urine

Specimen Requirements: Patient Preparation: High concentrations of barium are known to interfere with most metals tests. If barium-containing contrast media has been administered, a specimen should not be collected for 96 hours. Supplies: Urine Tubes, 10 mL (T068) Collection Container/Tube: Clean, plastic urine collection container with no metal cap or glued insert Submission Container/Tube: Plastic urine tube (T068) or clean, plastic aliquot container with no metal cap or glued insert Specimen Volume: 3 mL Collection Instructions: 1. Collect a random urine specimen. 2. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

Specimen Minimum Volume: 0.7 mL

Transport Temperature:
- Urine: Refrigerated (preferred) 28 days
- Ambient: 28 days
- Frozen: 28 days
CPT Code Information: 84630 Zinc Concentration; 82570 Creatinine Concentration;

**FZIP 57107**

**Ziprasidone (Geodone, Zeldox)**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Plasma: Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial.
- Serum: Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.3 mL

**Transport Temperature:**
- Varies
- Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

CPT Code Information: 80342

**FZOLP 57738**

**Zolpidem (Ambien), serum or plasma**

**Specimen Requirements:** Submit only 1 of the following specimens:
- Plasma: Draw blood in a green-top (sodium heparin) tube(s), plasma gel tube is not acceptable. Spin down and send 2 mL sodium heparin plasma refrigerated in a plastic vial.
- Serum: Draw blood in a plain red-top tube(s), serum gel tube is not acceptable. Spin down and send 2 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.25 mL

**Transport Temperature:**
- Varies
- Refrigerated (preferred) 7 days
  - Frozen 180 days
  - Ambient 72 hours

CPT Code Information: 80368

**ZONI 83685**

**Zonisamide, Serum**

**Specimen Requirements:** Container/Tube: Red top
- Specimen Volume: 1 mL
- Collection Instructions: Sample must be centrifuged and serum aliquoted off within 2 hours of draw.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum: Red
  - Refrigerated (preferred) 28 days
  - Ambient 28 days
  - Frozen 28 days

CPT Code Information: 80203
**FZCCE** 57562

**Zucchini (Cucurbita spp) IgE**

**Specimen Requirements:** Draw blood in a plain, red-top tube(s), serum gel tube(s) is acceptable. Spin down and send 0.5 mL of serum refrigerated in a plastic vial.

**Specimen Minimum Volume:** 0.5 mL

**Transport Temperature:**
- Serum Refrigerated (preferred) 28 days
  - Frozen 365 days
  - Ambient 28 days

**CPT Code Information:** 86003

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**MULT** 35577

**Zygosity Testing (Multiple Births)**

**Specimen Requirements:** Patient Preparation: A previous bone marrow transplant from an allogenic donor will interfere with testing. Call 800-533-1710 for instructions for testing patients who have received a bone marrow transplant. Submit only 1 of the following specimens: Specimen Type: Whole blood Container/Tube: Lavender top (EDTA) or yellow top (ACD) Specimen Volume: 3 mL Collection Instructions: 1. Invert several times to mix blood. 2. Send specimen in original tube. Specimen Stability Information: Ambient (preferred)/Refrigerated Due to the complexity of prenatal testing, consultation with the laboratory is required for all prenatal testing. Prenatal specimens can be sent Monday through Thursday and must be received by 5 p.m. CST on Friday in order to be processed appropriately. All prenatal specimens must be accompanied by a maternal blood specimen. Order MATCC / Maternal Cell Contamination, Molecular Analysis on both the prenatal and the maternal specimens. Specimen Type: Amniotic fluid Container/Tube: Amniotic fluid container Specimen Volume: 20 mL Specimen Stability Information: Refrigerated (preferred)/Ambient Specimen Type: Chorionic villi Container/Tube: 15-mL tube containing 15 mL of transport media Specimen Volume: 20 mg Specimen Stability Information: Refrigerated Acceptable: Specimen Type: Confluent cultured cells Container/Tube: T-25 flask Specimen Volume: 2 flasks Collection Instructions: Submit confluent cultured cells from another laboratory. Specimen Stability Information: Ambient (preferred)/Refrigerated

**Specimen Minimum Volume:**
- Blood: 0.5 mL
- Amniotic Fluid: 10 mL
- Chorionic Villi: 5 mg

**Transport Temperature:**
- varies

**CPT Code Information:** 81265 Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (eg, pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [eg, buccal swab or other germline tissue sample] and donor testing, twin zygosity testing or maternal cell contamination of fetal cells; Fibroblast Culture for Genetic Test; 88233-Tissue culture, skin or solid tissue biopsy (if appropriate); 88240-Cryopreservation (if appropriate); Amniotic Fluid Culture/Genetic Test; 88235-Tissue culture for amniotic fluid (if appropriate); 88240-Cryopreservation (if appropriate); Added as needed; 81266 each additional specimen (eg additional cord blood donor, additional fetal samples from different cultures, or additional zygosity in multiple birth pregnancies);