Known Variant Analysis-1 Variant, Varies

Test ID: KVAR1

Explanation:
Effective April 27, 2021 test KVAR1 will be made obsolete. All genes previously available under the KVAR1 test code will be available through the recommended alternative test.

Recommended alternative:

Familial Mutation, Targeted Testing, Varies

Test ID: FMTT

Useful for:
Diagnostic or predictive testing for specific conditions when a DNA variant of interest has been previously identified in a family member and follow-up testing for this specific variant in other family members is desired

Carrier screening for individuals at risk for having a variant that was previously identified in a family member

Segregation analysis for a familial DNA variant

Confirmation of germline status for variants detected via somatic testing

Genetics Information:
Familial variant targeted testing is available for any gene that is currently part of another genetic test offered by Mayo Clinic Laboratories. Additional genes may also be available and require consultation with the laboratory prior to ordering.

Targeted testing is available regardless as to whether the family/individual had previous testing through Mayo Clinic Laboratories or another laboratory. See Additional Testing Requirements if the familial variant was previously identified at an outside laboratory. Documentation of the specific familial variants is **required** and must be provided with the specimen in order to perform this test.

Consultation with the laboratory is required prior to ordering this test on prenatal specimens.

The preferred specimen for this test is whole blood. Other specimens may be acceptable depending on the gene and methodology required. Contact the laboratory if you have questions regarding a specific specimen type. In general, deletion/duplication analysis requires a higher volume and concentration of DNA, therefore, whole blood is the preferred specimen type.

In some cases, testing for a known variant may require submission of additional proband sample, or may not be available for technical or legal reasons.

Reflex Tests:
Please see test setup for individual reflex codes for specific known mutation gene regions.

Method:
Polymerase chain reaction (PCR) followed by DNA sequencing analysis, gene dosage analysis by array comparative genomic hybridization (aCGH), gene dosage analysis by multiplex ligation-dependent probe amplification (MLPA), quantitative polymerase chain reaction (qPCR), and/or droplet digital PCR (ddPCR).

Reference Values:
An interpretive report will be provided.

Necessary Information:
The identification of a specific variant in an affected family member **is required** before this test can be performed for additional family members. If a familial variant has not been previously identified, call 800-533-1710 to discuss testing options.

Familial Mutation Testing: Required Patient Information form (T721) in Special Instructions with documentation of the specific familial variant(s) **is required**. Testing will be held until information is received. If information is not received within 14 days of sample receipt, testing may be canceled.

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 specimen types:

Preferred:
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: 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
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 or younger 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, see Blood Spot Collection Instructions in Special Instructions.
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
Additional Information: Indicate the tests to be performed on the fibroblast culture cells. A separate culture charge will be assessed under FIBR / Fibroblast Culture, Tissue. 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.
Specimen Volume: 4-mm punch
Additional Information: A separate culture charge will be assessed under FIBR / Fibroblast Culture, Tissue. An additional 4 weeks is required to culture fibroblasts before genetic testing can occur.
Specimen Stability Information: Refrigerated (preferred)/Ambient

Specimen Type: Cord blood
Container/Tube: Lavender top (EDTA)
Specimen Volume: 3 mL
Collection Instructions:
1. Send specimen in original tube
2. Label specimen as cord blood
Specimen Stability Information: Ambient (preferred) 4 days/Refrigerated 14 days

Specimen Type: Extracted 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
Additional Information: A separate culture charge will be assessed under CULAF / Culture for Genetic Testing, Amniotic Fluid.
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 CULBF / 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 Stability Information:

Specimen Type	Temperature
Varies	Varies

Cautions:

The identification of a disease-associated variant in an affected family member is necessary before predictive testing for other family members can be performed. Call 800-533-1710 to discuss testing options if a familial variant has not been previously identified.

Test results should be interpreted in the context of clinical findings, family history, and other laboratory testing. Misinterpretation of results may occur if the information provided is inaccurate or incomplete.

Technical Limitations:
Rare allelic variants may be present and could lead to false-negative or false-positive results. If results obtained do not match the clinical findings, additional testing should be considered.

Analysis is performed for the familial variants provided only. This assay does not rule out the presence of other variants within this gene or within other genes that may be associated with the familial condition. **Note:** Analysis of the area surrounding the familial variant may be required in the performance of this assay, which could result in identification of additional variants. Contact the laboratory with any questions regarding assay performance.

In addition to disease-related probes, the multiplex ligation-dependent probe amplification technique utilizes probes localized to other chromosomal regions as internal controls. In certain circumstances, these control probes may detect other diseases or conditions for which this test was not specifically intended. Results of the control probes are not normally reported. However, in cases where clinically relevant information is identified, the ordering physician will be informed of the result and provided with recommendations for any appropriate follow-up testing.

Reclassification of Variants Policy:
At this time, it is not standard practice for the laboratory to systematically review previously classified variants on a regular basis. The laboratory encourages health care providers to contact the laboratory at any time to learn how the status of a particular variant may have changed over time.

CPT Code:

The FMTT test is an orderable code only. Please see corresponding reflex test in the lab test catalog for each individual known mutation for CPT codes and _G codes for pricing.

Day(s) Setup: Monday through Friday; Varies

Analytic Time: 10 days

Questions

Contact Heather Flynn Gilmer or Melissa Lonzo Green, Laboratory Technologist Resource Coordinators at 800-533-1710.