Test Definition: EPS2

Epilepsy, Autoimmune/Paraneoplastic Evaluation, Serum

Overview

Useful For

Investigating new onset cryptogenic epilepsy with incomplete seizure control and duration of less than 2 years, using serum specimens

Investigating new onset cryptogenic epilepsy plus 1 or more of the following accompaniments:
-Psychiatric accompaniments (psychosis, hallucinations)
-Movement disorder (myoclonus, tremor, dyskinesias)
-Headache
-Cognitive impairment/encephalopathy
-Autoimmune stigmata (personal history or family history or signs of diabetes mellitus, thyroid disorder, vitiligo, premature graying of hair, myasthenia gravis, rheumatoid arthritis, systemic lupus erythematosus, idiopathic adrenocortical insufficiency), or multiple sclerosis
-History of cancer
-Smoking history (20 or more pack-years) or other cancer risk factors
-Investigating seizures occurring within the context of a subacute multifocal neurological disorder without obvious cause, especially in a patient with a past or family history of cancer
-A rising autoantibody titer in a previously seropositive patient suggests cancer recurrence

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
AEPSI	Epilepsy, Interpretation, S	No	Yes
AMPCS	AMPA-R Ab CBA, S	No	Yes
AMPHS	Amphiphysin Ab, S	No	Yes
AGN1S	Anti-Glial Nuclear Ab, Type 1	No	Yes
ANN1S	Anti-Neuronal Nuclear Ab, Type 1	No	Yes
ANN2S	Anti-Neuronal Nuclear Ab, Type 2	No	Yes
ANN3S	Anti-Neuronal Nuclear Ab, Type 3	No	Yes
CS2CS	CASPR2-IgG CBA, S	No	Yes
CRMS	CRMP-5-IgG, S	No	Yes
DPPCS	DPPX Ab CBA, S	No	Yes
GABCS	GABA-B-R Ab CBA, S	No	Yes
GD65S	GAD65 Ab Assay, S	Yes	Yes
GFAIS	GFAP IFA, S	No	Yes
LG1CS	LGI1-IgG CBA, S	No	Yes

GL1IS	mGluR1 Ab IFA, S	No	Yes
NCDIS	Neurochondrin IFA, S	No	Yes
NMDCS	NMDA-R Ab CBA, S	No	Yes
PCAB2	Purkinje Cell Cytoplasmic Ab Type 2	No	Yes
PCATR	Purkinje Cell Cytoplasmic Ab Type Tr	No	Yes
PDEIS	PDE10A Ab IFA, S	No	Yes
T46IS	TRIM46 Ab IFA, S	No	Yes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
AGNBS	AGNA-1 Immunoblot, S	No	No
AMPIS	AMPA-R Ab IF Titer Assay, S	No	No
AMIBS	Amphiphysin Immunoblot, S	No	No
AN1BS	ANNA-1 Immunoblot, S	No	No
AN2BS	ANNA-2 Immunoblot, S	No	No
CRMWS	CRMP-5-IgG Western Blot, S	Yes	No
DPPTS	DPPX Ab IFA Titer, S	No	No
GABIS	GABA-B-R Ab IF Titer Assay, S	No	No
GFACS	GFAP CBA, S	No	No
GFATS	GFAP IFA Titer, S	No	No
GL1CS	mGluR1 Ab CBA, S	No	No
GL1TS	mGluR1 Ab IFA Titer, S	No	No
NMDIS	NMDA-R Ab IF Titer Assay, S	No	No
PCTBS	PCA-Tr Immunoblot, S	No	No
AGNTS	AGNA-1 Titer, S	No	No
AN1TS	ANNA-1 Titer, S	No	No
AN2TS	ANNA-2 Titer, S	No	No
AN3TS	ANNA-3 Titer, S	Yes	No
APHTS	Amphiphysin Ab Titer, S	No	No
CRMTS	CRMP-5-IgG Titer, S	No	No
NCDCS	Neurochondrin CBA, S	No	No
NCDTS	Neurochondrin IFA Titer, S	No	No
PC2TS	PCA-2 Titer, S	No	No
PCTTS	PCA-Tr Titer, S	No	No

PDETS	PDE10A Ab IFA Titer, S	No	No
T46CS	TRIM46 Ab CBA, S	No	No
T46TS	TRIM46 Ab IFA Titer, S	No	No

Testing Algorithm

To determine the necessity of laboratory testing for patients with suspected autoimmune encephalitis, epilepsy or dementia, see the Antibody Prevalence in Epilepsy and Encephalopathy (APE2) scorecard.

If the client requests or the immunofluorescence assay (IFA) patterns suggest collapsin response-mediator protein-5 (CRMP-5)-IgG, then the CRMP-5-IgG IFA titer and CRMP-5-IgG Western blot will be performed at an additional charge.

If the IFA patterns suggest amphiphysin antibody, then the amphiphysin immunoblot and amphiphysin IFA titer will be performed at an additional charge.

If the IFA pattern suggests antiglial nuclear antibody (AGNA)-1, then the AGNA-1 immunoblot and AGNA-1 IFA titer will be performed at an additional charge.

If the IFA pattern suggests antineuronal nuclear antibody type 1 (ANNA-1), then the ANNA-1 IFA titer, ANNA-1 immunoblot, and ANNA-2 immunoblot will be performed at an additional charge.

If the IFA pattern suggests ANNA-2 antibody, then the ANNA-2 IFA titer, ANNA-2 immunoblot, ANNA-1 immunoblot will be performed at an additional charge.

If the client requests or if the IFA pattern suggests ANNA-3 antibody, then the ANNA-3 IFA titer will be performed at an additional charge.

If the IFA pattern suggests Purkinje cytoplasmic antibody type 2 (PCA-2), then the PCA-2 IFA titer will be performed at an additional charge.

If the IFA pattern suggests PCA-Tr antibody, then the PCA-Tr immunoblot and PCA-Tr IFA titer will be performed at an additional charge.

If the AMPA (alpha-amino-3-hydroxy-5-methyl-4-isoxazole propionic acid) receptor antibody cell-binding assay (CBA) result is positive, then the AMPA receptor antibody IFA titer will be performed at an additional charge.

If the gamma-aminobutyric acid B (GABA-B) receptor antibody CBA result is positive, then the GABA-B-receptor antibody IFA titer assay will be performed at an additional charge.

If the IFA pattern suggests glial fibrillary acidic protein (GFAP) antibody, then the GFAP IFA titer and GFAP CBA will be performed at an additional charge.

If the N-methyl-D-aspartate (NMDA) receptor antibody CBA result is positive, then the NMDA-receptor antibody IFA titer assay will be performed at an additional charge.

If the dipeptidyl-peptidase-like protein-6 (DPPX) antibody CBA result is positive, then the DPPX IFA titer will be performed at an additional charge.

If the IFA pattern suggests metabotropic glutamate receptor 1 (mGluR1) antibody, then the mGluR1 antibody CBA and mGluR1 IFA titer will be performed at an additional charge.

If the IFA pattern suggests neurochondrin antibody, then the neurochondrin antibody CBA and neurochondrin IFA titer will be performed at an additional charge.

If the IFA pattern suggests tripartite motif-containing protein 46 (TRIM46) antibody, then TRIM46 antibody CBA and TRIM46 IFA titer will be performed at an additional charge.

If the IFA pattern suggests phosphodiesterase 10A (PDE10A) antibody, then PDE10A antibody IFA titer will be performed at an additional charge.

For more information see:
-Autoimmune/Paraneoplastic Epilepsy Evaluation Algorithm-Serum
-Epilepsy: Unexplained Refractory and/or Familial Testing Algorithm

Special Instructions

- Autoimmune/Paraneoplastic Epilepsy Evaluation Algorithm-Serum
- Epilepsy: Unexplained Refractory and/or Familial Testing Algorithm

Method Name

AGN1S, AGNTS, AMPIS, AMPHS, APHTS, ANN1S, AN1TS, ANN2S, AN2TS, ANN3S, AN3TS, CRMTS, CRMS, DPPTS, GABIS, GFAIS, GFATS, GL1IS, GL1TS, NCDIS, NCDTS, NMDIS, PCAB2, PC2TS, PCATR, PCTTS, PDEIS, PDETS, T46IS, T46TS: Indirect Immunofluorescence Assay (IFA)

AMPCS, CS2CS, DPPCS, GABCS, GFACS, LG1CS, GL1CS, NCDCS, NMDCS, T46CS: Cell Binding Assay (CBA)

CRMWS: Western Blot (WB)

AGNBS, AMIBS, AN1BS, AN2BS, PCTBS: Immunoblot (IB)

GD65S: Radioimmunoassay (RIA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

Multiple neurological phenotype-specific autoimmune/paraneoplastic evaluations are available. For more information as well as phenotype-specific testing options, see Autoimmune Neurology Test Ordering Guide.

When more than one evaluation is ordered on the same order number, the duplicate test will be canceled.

For a list of antibodies performed with each evaluation, see Autoimmune Neurology Antibody Matrix.

This test **should not be requested** for 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.

Necessary Information

Provide the following information:
-Relevant clinical information
-Ordering healthcare professional's name, phone number, mailing address, and email address

Specimen Required

Patient Preparation: For optimal antibody detection, specimen collection is recommended prior to initiation of immunosuppressant medication or intravenous immunoglobulin (IVIg) treatment.
Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube:
Preferred: Red top
Acceptable: Serum gel
Submission Container/Tube: Plastic vial
Specimen Volume: 4 mL
Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send a Neurology Specialty Testing Client Test Request (T732) with the specimen.

Specimen Minimum Volume

2.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	28 days	
	Ambient	72 hours	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Antiepileptic drugs (AED) are the mainstay of treatment for epilepsy, but seizures continue in one-third of patients despite appropriate AED therapeutic trials. The etiology of epilepsy often remains unclear. Seizures are a common symptom in autoimmune neurological disorders, including limbic encephalitis and multifocal paraneoplastic disorders. Seizures may be the exclusive manifestation of an autoimmune encephalopathy without evidence of limbic encephalitis.

Autoimmune epilepsy is increasingly recognized in the spectrum of neurological disorders characterized by detection of neural autoantibodies in serum or spinal fluid (CSF) and responsiveness to immunotherapy. The advent of more sensitive and specific serological detection methods is increasingly revealing previously underappreciated autoimmune epilepsies. Neural autoantibodies specific for intracellular and plasma membrane antigens aid the diagnosis of autoimmune epilepsy, but no single antibody is specific for this diagnosis.

Autoantibody specificities most informative for autoimmune epilepsies include leucine-rich glioma inactivated protein-1 (LGI1), glutamic acid decarboxylase-65 (GAD65), N-methyl-D-aspartate receptor (NMDA-R), alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptors (AMPA-R), and gamma-aminobutyric acid type B receptor (GABA-B-R) antibodies.

Autoantibodies recognizing onconeural proteins shared by neurons, glia, or muscle (eg, antineuronal nuclear antibody, type 1 [ANNA 1]; collapsin response-mediator protein-5 neuronal [CRMP-5-IgG]; N-type calcium channel antibody), also serve as markers of paraneoplastic or idiopathic autoimmune epilepsies. A specific neoplasm is often predictable by the individual patient's autoantibody profile.

Suspicion for autoimmune epilepsy on clinical grounds justifies comprehensive evaluation of CSF and serum for neural autoantibodies. Selective testing for individual autoantibodies is not advised because each is individually rare, and a timely diagnosis is critical. Collectively, the antibodies tested for in the autoimmune epilepsy evaluations represent a broad spectrum of treatable disorders, some of which are associated with occult cancer. Testing of CSF for autoantibodies is particularly helpful when serum testing is negative, although, in some circumstances, testing both serum and CSF simultaneously is pertinent. Testing of CSF is recommended for some antibodies (eg, NMDA-R antibody and glial fibrillary acidic protein [GFAP]-IgG) because CSF testing is both more sensitive and specific. In contrast, serum testing for LGI1 antibody is more sensitive than CSF testing. Failure to detect a neural antibody does not exclude the diagnosis of autoimmune epilepsy when other clinical clues exist. A trial of immunotherapy is justifiable in those cases.

Reference Values

Test ID	Reporting Name	Methodology*	Reference Value
AEPSI	Epilepsy, Interpretation, S	Medical interpretation	Interpretive report
AMPCS	AMPA-R Ab CBA, S	CBA	Negative
AMPHS	Amphiphysin Ab, S	IFA	Negative
AGN1S	Anti-Glial Nuclear Ab, Type 1	IFA	Negative
ANN1S	Anti-Neuronal Nuclear Ab, Type 1	IFA	Negative
ANN2S	Anti-Neuronal Nuclear Ab, Type 2	IFA	Negative
ANN3S	Anti-Neuronal Nuclear Ab, Type 3	IFA	Negative
CS2CS	CASPR2-IgG CBA, S	CBA	Negative
CRMS	CRMP-5-IgG, S	IFA	Negative
DPPCS	DPPX Ab CBA, S	CBA	Negative
GABCS	GABA-B-R Ab CBA, S	CBA	Negative
GD65S	GAD65 Ab Assay, S	RIA	< or =0.02 nmol/L Reference values apply to all ages
GFAIS	GFAP IFA, S	IFA	Negative
LG1CS	LGI1-IgG CBA, S	CBA	Negative
GL1IS	mGluR1 Ab IFA, S	IFA	Negative
NCDIS	Neurochondrin IFA, S	IFA	Negative
NMDCS	NMDA-R Ab CBA, S	CBA	Negative
PCAB2	Purkinje Cell Cytoplasmic Ab Type 2	IFA	Negative
PCATR	Purkinje Cell Cytoplasmic Ab Type Tr	IFA	Negative
PDEIS	PDE10A Ab IFA, S	IFA	Negative
T46IS	TRIM46 Ab IFA, S	IFA	Negative

Reflex Information:

Test ID	Reporting Name	Methodology*	Reference Value
AGNBS	AGNA-1 Immunoblot, S	IB	Negative
AGNTS	AGNA-1 Titer, S	IFA	<1:240
AMPIS	AMPA-R Ab IF Titer Assay, S	IFA	<1:240
AMIBS	Amphiphysin Immunoblot, S	IB	Negative
AN1BS	ANNA-1 Immunoblot, S	IB	Negative
AN1TS	ANNA-1 Titer, S	IFA	<1:240
AN2BS	ANNA-2 Immunoblot, S	IB	Negative
AN2TS	ANNA-2 Titer, S	IFA	<1:240
AN3TS	ANNA-3 Titer, S	IFA	<1:240
APHTS	Amphiphysin Ab Titer, S	IFA	<1:240
CRMTS	CRMP-5-IgG Titer, S	IFA	<1:240
CRMWS	CRMP-5-IgG Western Blot, S	WB	Negative

DPPTS	DPPX Ab IFA Titer, S	IFA	<1:240
GABIS	GABA-B-R Ab IF Titer Assay, S	IFA	<1:240
GFACS	GFAP CBA, S	CBA	Negative
GFATS	GFAP IFA Titer, S	IFA	<1:240
GL1CS	mGluR1 Ab CBA, S	CBA	Negative
GL1TS	mGluR1 Ab IFA Titer, S	IFA	<1:240
NCDCS	Neurochondrin CBA, S	CBA	Negative
NCDTS	Neurochondrin IFA Titer, S	IFA	<1:240
NMDIS	NMDA-R Ab IF Titer Assay, S	IFA	<1:240
PC2TS	PCA-2 Titer, S	IFA	<1:240
PCTBS	PCA-Tr Immunoblot, S	IB	Negative
PCTTS	PCA-Tr Titer, S	IFA	<1:240
PDETS	PDE10A Ab IFA Titer, S	IFA	<1:240
T46CS	TRIM46 Ab CBA, S	CBA	Negative
T46TS	TRIM46 Ab IFA Titer, S	IFA	<1:240

*Methodology abbreviations:
Immunofluorescence assay (IFA)
Cell-binding assay (CBA)
Western blot (WB)
Radioimmunoassay (RIA)
Immunoblot (IB)

Neuron-restricted patterns of IgG staining that do not fulfill criteria for ANNA-1, ANNA-2, ANNA-3, PCA-2, or PCA-Tr may be reported as "unclassified anti-neuronal IgG." Complex patterns that include nonneuronal elements may be reported as "uninterpretable."

Note: CRMP-5 titers lower than 1:240 are detectable by recombinant CRMP-5 Western blot analysis. CRMP-5 Western blot analysis will be done on request on stored serum (held 4 weeks). This supplemental testing is recommended in cases of chorea, vision loss, cranial neuropathy, and myelopathy. Call the Neuroimmunology Laboratory at 800-533-1710 to request CRMP-5 Western blot.

Interpretation

Antibodies specific for neuronal, glial, or muscle proteins are valuable serological markers of autoimmune epilepsy and of a patient's immune response to cancer. These autoantibodies are not found in healthy subjects and are usually accompanied by subacute neurological symptoms and signs. It is not uncommon for more than 1 of the following autoantibodies to be detected in patients with autoimmune dementia.
-Plasma membrane antibodies (N-methyl-D-aspartate [NMDA] receptor; 2-amino-3-[5-methyl-3-oxo-1,2-oxazol-4-yl] propanoic acid [AMPA] receptor; gamma-amino butyric acid [GABA-B] receptor). These autoantibodies are all potential effectors of dysfunction.
-Antineuronal nuclear antibody, type 1 (ANNA-1) or type 3 (ANNA-3).
-Neuronal or muscle cytoplasmic antibodies (amphiphysin, Purkinje cell antibody-type 2 [PCA-2], collapsin response-mediator protein-5 neuronal [CRMP-5-IgG], or glutamic acid decarboxylase [GAD65] antibody).

Cautions

Negative results do not exclude autoimmune epilepsy or cancer.

This test does not detect Ma2 antibody (also known as MaTa). Ma2 antibody has been described in patients with brainstem and limbic encephalitis in the context of testicular germ cell neoplasms. Scrotal ultrasound is advisable in men who present with unexplained subacute encephalitis.

Intravenous immunoglobulin treatment prior to the serum collection may cause a false-positive result.

Clinical Reference

1. Smith KM, Britton JW, Thakolwiboon S, et al. Seizure characteristics and outcomes in patients with neurological conditions related to high-risk paraneoplastic antibodies. Epilepsia. 2023;64(9):2385-2398. doi:10.1111/epi.17695
2. Garrido Sanabria ER, Zahid A, Britton J, et al. CASPR2-IgG-associated autoimmune seizures. Epilepsia. 2022;63(3):709-722. doi:10.1111/epi.17164
3. Smith KM, Zalewski NL, Budhram A, et al. Musicogenic epilepsy: Expanding the spectrum of glutamic acid decarboxylase 65 neurological autoimmunity. Epilepsia. 2021;62(5):e76-e81. doi:10.1111/epi.16888
4. Steriade C, Britton J, Dale RC, et al. Acute symptomatic seizures secondary to autoimmune encephalitis and autoimmune-associated epilepsy: Conceptual definitions. Epilepsia. 2020;61(7):1341-1351. doi:10.1111/epi.16571
5. Dubey D, Singh J, Britton JW, et al. Predictive models in the diagnosis and treatment of autoimmune epilepsy. Epilepsia. 2017;58(7):1181-1189. doi:10.1111/epi.13797

Performance

Method Description

Cell-Binding Assay:
Patient specimen is applied to a composite slide containing transfected and nontransfected EU90 cells. After incubation and washing, fluorescein-conjugated goat-antihuman IgG is applied to detect the presence of patient IgG binding.(Package insert: IIFT: Neurology Mosaics, Instructions for the indirect immunofluorescence test. EUROIMMUN; FA_112d-1_A_UK_C13, 02/25/2019)

Indirect Immunofluorescence Assay:
The patient's specimen is tested by a standardized immunofluorescence assay that uses a composite frozen section of mouse cerebellum, kidney, and gut tissues. After incubation with the specimen and washing, fluorescein-conjugated goat-antihuman IgG is applied. Neuron-specific autoantibodies are identified by their characteristic fluorescence staining patterns. Specimens that are scored positive for any neuronal nuclear or cytoplasmic autoantibody are titrated. Interference by coexisting non-neuron-specific autoantibodies can usually be eliminated by serologic absorption.(Honorat JA, Komorowski L, Josephs KA, et al. IgLON5 antibody: Neurological accompaniments and outcomes in 20 patients. Neurol Neuroimmunol Neuroinflamm. 2017;4[5]:e385. Published 2017 Jul 18. doi:10.1212/NXI.0000000000000385)

Radioimmunoassay:
(125)I-labeled recombinant human antigens or labeled receptors are incubated with patient specimen. After incubation,

anti-human IgG is added to form an immunoprecipitate. The amount of (125)I-labeled antigen in the immunoprecipitate is measured using a gamma-counter. The amount of gamma emission in the precipitate is proportional to the amount of antigen-specific IgG in the specimen. Results are reported as units of precipitated antigen (nmol) per liter of patient sample.(Griesmann GE, Kryzer TJ, Lennon VA. Autoantibody profiles of myasthenia gravis and Lambert-Eaton myasthenic syndrome. In: Rose NR, Hamilton RG, eds. Manual of Clinical and Laboratory Immunology. 6th ed. ASM Press; 2002:1005-1012; Walikonis JE, Lennon VA. Radioimmunoassay for glutamic acid decarboxylase [GAD65] autoantibodies as a diagnostic aid for stiff-man syndrome and a correlate of susceptibility to type 1 diabetes mellitus. Mayo Clin Proc. 1998;73[12]:1161-1166; Jones AL, Flanagan EP, Pittock SJ, et al. Responses to and outcomes of treatment of autoimmune cerebellar ataxia in adults. JAMA Neurol. 2015;72[11]:1304-1312. doi:10.1001/jamaneurol.2015.2378)

Immunoblot:
All steps are performed at ambient temperature (18-28 degrees C) utilizing the EUROBlot One instrument. Diluted patient specimen (1:101) is added to test strips (strips containing recombinant antigen manufactured and purified using biochemical methods) in individual channels and incubated for 30 minutes. Positive specimens will bind to the purified recombinant antigen and negative specimens will not bind. Strips are washed to remove unbound serum antibodies and then incubated with anti-human IgG antibodies (alkaline phosphatase-labelled) for 30 minutes. The strips are again washed to remove unbound antihuman IgG antibodies and nitroblue tetrazolium chloride/5-bromo-4-chloro-3-indolylphosphate (NBT/BCIP) substrate is added. Alkaline phosphatase enzyme converts the soluble substrate into a colored insoluble product on the membrane to produces a black band. Strips are digitized via picture capture on the EUROBlot One instrument and evaluated with the EUROLineScan software.(O'Connor K, Waters P, Komorowski L, et al. GABAA receptor autoimmunity: A multicenter experience. Neurol Neuroimmunol Neuroinflamm. 2019;6[3]:e552. doi:10.1212/NXI.0000000000000552)

Western Blot:
Neuronal antigens extracted aqueously from adult rat cerebellum, full-length recombinant human collapsin response-mediator protein-5 (CRMP-5), or full-length recombinant human amphiphysin protein is denatured, reduced, and separated by electrophoresis on 10% polyacrylamide gel. IgG is detected autoradiographically by enhanced chemiluminescence.(Yu Z, Kryzer TJ, Griesmann GE, Kim K, Benarroch EE, Lennon VA. CRMP-5 neuronal autoantibody: marker of lung cancer and thymoma-related autoimmunity. Ann Neurol. 2001;49[2]:146-154; Dubey D, Jitprapaikulsan J, Bi H, et al. Amphiphysin-IgG autoimmune neuropathy: A recognizable clinicopathologic syndrome. Neurology. 2019;93[20]:e1873-e1880. doi:10.1212/WNL.0000000000008472)

PDF Report
No

Day(s) Performed
Profile tests: Monday through Sunday; Reflex tests: Varies

Report Available
8 to 12 days

Specimen Retention Time
28 days

Performing Laboratory Location

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86255 x 19
86341
84182-AGNBS (if appropriate)
86256-AGNTS (if appropriate)
86256-AMPIS (if appropriate)
84182-AMIBS (if appropriate)
84182-AN1BS (if appropriate)
86256-AN1TS (if appropriate)
84182-AN2BS (if appropriate)
86256-AN2TS (if appropriate)
86256-AN3TS (if appropriate)
86256-APHTS (if appropriate)
86256-CRMTS (if appropriate)
84182-CRMWS (if appropriate)
86256-DPPTS (if appropriate)
86256-GABIS (if appropriate)
86255-GFACS (if appropriate)
86256-GFATS (if appropriate)
86255-GL1CS (if appropriate)
86256-GL1TS (if appropriate)
86255-NCDCS (if appropriate)
86256-NCDTS (if appropriate)
86256-NMDIS (if appropriate)
86256-PC2TS (if appropriate)
84182-PCTBS (if appropriate)
86256-PCTTS (if appropriate)
86256-PDETS (if appropriate)
86255-T46CS (if appropriate)

86256-T46TS (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
EPS2	Epilepsy, Autoimm/Paraneo, S	94698-8

Result ID	Test Result Name	Result LOINC® Value
89080	AGNA-1, S	84927-3
81722	Amphiphysin Ab, S	72327-0
80150	ANNA-1, S	33615-6
80776	ANNA-2, S	43187-4
83137	ANNA-3, S	43102-3
83077	CRMP-5-IgG, S	72504-4
81596	GAD65 Ab Assay, S	30347-9
83138	PCA-2, S	84925-7
83076	PCA-Tr, S	84926-5
61516	NMDA-R Ab CBA, S	93503-1
61518	AMPA-R Ab CBA, S	93489-3
61519	GABA-B-R Ab CBA, S	93428-1
34259	Epilepsy, Interpretation, S	69048-7
618898	IFA Notes	48767-8
64279	LGI1-IgG CBA, S	94287-0
64281	CASPR2-IgG CBA, S	94285-4
64933	DPPX Ab CBA, S	94676-4
64928	mGluR1 Ab IFA, S	94347-2
605155	GFAP IFA, S	94346-4
615867	Neurochondrin IFA, S	101452-1
616445	TRIM46 Ab IFA, S	103843-9
620068	PDE10A Ab IFA, S	103842-1