MAYO CLINIC LABORATORIES

Test Definition: EPC2

Epilepsy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid

Overview

Useful For

Investigating new onset cryptogenic epilepsy with incomplete seizure control and duration of fewer than 2 years using spinal fluid 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 an obvious cause, especially in a patient with a past or family history of cancer

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
AEPCI	Epilepsy, Interpretation, CSF	No	Yes
AMPCC	AMPA-R Ab CBA, CSF	No	Yes
AMPHC	Amphiphysin Ab, CSF	No	Yes
AGN1C	Anti-Glial Nuclear Ab, Type 1	No	Yes
ANN1C	Anti-Neuronal Nuclear Ab, Type 1	No	Yes
ANN2C	Anti-Neuronal Nuclear Ab, Type 2	No	Yes
ANN3C	Anti-Neuronal Nuclear Ab, Type 3	No	Yes
CS2CC	CASPR2-IgG CBA, CSF	No	Yes
CRMC	CRMP-5-IgG, CSF	No	Yes
DPPIC	DPPX Ab IFA, CSF	No	Yes
GD65C	GAD65 Ab Assay, CSF	Yes	Yes
GABCC	GABA-B-R Ab CBA, CSF	No	Yes
GFAIC	GFAP IFA, CSF	No	Yes
LG1CC	LGI1-IgG CBA, CSF	No	Yes

GL1IC	mGluR1 Ab IFA, CSF	No	Yes
NCDIC	Neurochondrin IFA, CSF	No	Yes
NMDCC	NMDA-R Ab CBA, CSF	No	Yes
PCTRC	Purkinje Cell Cytoplasmc Ab Type Tr	No	Yes
PCA2C	Purkinje Cell Cytoplasmic Ab Type 2	No	Yes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
AGNBC	AGNA-1 Immunoblot, CSF	No	No
AMPIC	AMPA-R Ab IF Titer Assay, CSF	No	No
AMIBC	Amphiphysin Immunoblot, CSF	No	No
AN1BC	ANNA-1 Immunoblot, CSF	No	No
AN2BC	ANNA-2 Immunoblot, CSF	No	No
CRMWC	CRMP-5-IgG Western Blot, CSF	Yes	No
DPPCC	DPPX Ab CBA, CSF	No	No
DPPTC	DPPX Ab IFA Titer, CSF	No	No
GABIC	GABA-B-R Ab IF Titer Assay, CSF	No	No
GFACC	GFAP CBA, CSF	No	No
GFATC	GFAP IFA Titer, CSF	No	No
GL1CC	mGluR1 Ab CBA, CSF	No	No
GL1TC	mGluR1 Ab IFA Titer, CSF	No	No
NMDIC	NMDA-R Ab IF Titer Assay, CSF	No	No
PCTBC	PCA-Tr Immunoblot, CSF	No	No
AGNTC	AGNA-1 Titer, CSF	No	No
AN1TC	ANNA-1 Titer, CSF	No	No
AN2TC	ANNA-2 Titer, CSF	No	No
AN3TC	ANNA-3 Titer, CSF	No	No
APHTC	Amphiphysin Ab Titer, CSF	No	No
CRMTC	CRMP-5-IgG Titer, CSF	No	No
NCDCC	Neurochondrin CBA, CSF	No	No
NCDTC	Neurochondrin IFA Titer, CSF	No	No
PC2TC	PCA-2 Titer, CSF	No	No
PCTTC	PCA-Tr Titer, CSF	No	No

Testing Algorithm

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

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

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

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

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

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

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

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

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

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

If the IFA pattern suggests neurochondrin antibody, then neurochondrin antibody CBA and neurochondrin IFA titer will

be performed at an additional charge.

For more information see Autoimmune/Paraneoplastic Epilepsy Evaluation Algorithm-Spinal Fluid.

Special Instructions

- Autoimmune/Paraneoplastic Epilepsy Evaluation Algorithm-Spinal Fluid

Method Name

AGN1C, AGNTC, AMPIC, AMPHC, APHTC, ANN1C, AN1TC, ANN2C, AN2TC, ANN3C, AN3TC, CRMTC, CRMC, DPPIC, DPPTC, GABIC, GFAIC, GFATC, GL1IC, GL1TC, NCDIC, NCDTC, NMDIC, PCA2C, PC2TC, PCTRC, PCTTC: Indirect Immunofluorescence Assay (IFA)

AMPCC, CS2CS, DPPCC, GABCC, GFACC, LG1CC, GL1CC, NCDCC, NMDCC: Cell Binding Assay (CBA)

CRMWC: Western Blot (WB)

AGNBC, AMIBC, AN1BC, AN2BC, PCTBC: Immunoblot (IB)

GD65C: Radioimmunoassay (RIA)

NY State Available

Yes

Specimen

Specimen Type

CSF

Ordering Guidance

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

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

Necessary Information

Provide the following information:
-Relevant clinical information
-Ordering provider name, phone number, mailing address, and e-mail address

Specimen Required

Collection Container/Tube: Sterile vial
Specimen Volume: 4 mL

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

Specimen Minimum Volume
2 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

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

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-isoxazole propionic 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 in particular (such as 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
AEPCI	Epilepsy, Interpretation, CSF	Medical interpretation	NA
AMPCC	AMPA-R Ab CBA, CSF	CBA	Negative
AMPHC	Amphiphysin Ab, CSF	IFA	Negative
AGN1C	Anti-Glial Nuclear Ab, Type 1	IFA	Negative
ANN1C	Anti-Neuronal Nuclear Ab, Type 1	IFA	Negative
ANN2C	Anti-Neuronal Nuclear Ab, Type 2	IFA	Negative
ANN3C	Anti-Neuronal Nuclear Ab, Type 3	IFA	Negative
CS2CC	CASPR2-IgG CBA, CSF	CBA	Negative
CRMC	CRMP-5-IgG, CSF	IFA	Negative
DPPIC	DPPX Ab IFA, CSF	IFA	Negative
GABCC	GABA-B-R Ab CBA, CSF	CBA	Negative
GD65C	GAD65 Ab Assay, CSF	RIA	< or =0.02 nmol/L Reference values apply to all ages.
GFAIC	GFAP IFA, CSF	IFA	Negative
LG1CC	LGI1-IgG CBA, CSF	CBA	Negative
GL1IC	mGluR1 Ab IFA, CSF	IFA	Negative
NCDIC	Neurochondrin IFA, CSF	IFA	Negative
NMDCC	NMDA-R Ab CBA, CSF	CBA	Negative
PCTRC	Purkinje Cell Cytoplasmic Ab Type Tr	IFA	Negative
PCA2C	Purkinje Cell Cytoplasmic Ab Type 2	IFA	Negative

Reflex Information:

Test ID	Reporting Name	Methodology*	Reference Value
AGNBC	AGNA-1 Immunoblot, CSF	IB	Negative

AGNTC	AGNA-1 Titer, CSF	IFA	<1:2
AMPIC	AMPA-R Ab IF Titer Assay, CSF	IFA	<1:2
AMIBC	Amphiphysin Immunoblot, CSF	IB	Negative
AN1BC	ANNA-1 Immunoblot, CSF	IB	Negative
AN1TC	ANNA-1 Titer, CSF	IFA	<1:2
AN2BC	ANNA-2 Immunoblot, CSF	IB	Negative
AN2TC	ANNA-2 Titer, CSF	IFA	<1:2
AN3TC	ANNA-3 Titer, CSF	IFA	<1:2
APHTC	Amphiphysin Ab Titer, CSF	IFA	<1:2
CRMTC	CRMP-5-IgG Titer, CSF	IFA	<1:2
CRMWC	CRMP-5-IgG Western Blot, CSF	WB	Negative
DPPCC	DPPX Ab CBA, CSF	CBA	Negative
DPPTC	DPPX Ab IFA Titer, CSF	IFA	<1:2
GABIC	GABA-B-R Ab IF Titer Assay, CSF	IFA	<1:2
GFACC	GFAP CBA, CSF	CBA	Negative
GFATC	GFAP IFA Titer, CSF	IFA	<1:2
GL1CC	mGluR1 Ab CBA, CSF	CBA	Negative
GL1TC	mGluR1 Ab IFA Titer, CSF	IFA	<1:2
NCDCC	Neurochondrin CBA, CSF	CBA	Negative
NCDTC	Neurochondrin IFA Titer, CSF	IFA	<1:2
NMDIC	NMDA-R Ab IF Titer Assay, CSF	IFA	<1:2
PC2TC	PCA-2 Titer, CSF	IFA	<1:2
PCTBC	PCA-Tr Immunoblot, CSF	IB	Negative
PCTTC	PCA-Tr Titer, CSF	IFA	<1:2

*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 antineuronal IgG." Complex patterns that include non-neuronal elements may be reported as "uninterpretable."

Note: CRMP-5 titers lower than 1:2 are detectable by recombinant CRMP-5 Western blot analysis. CRMP-5 Western blot analysis will be done on request on stored spinal fluid (held for 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 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 epilepsy:
-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-aminobutyric acid [GABA-B] receptor). These autoantibodies are all potential effectors of dysfunction
-Antineuronal nuclear antibody, type 1 (ANNA-1) or 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)
A rising autoantibody titer in a previously seropositive patient suggests cancer recurrence.

Cautions

Negative results do not exclude autoimmune epilepsy or cancer.

This evaluation 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.

Clinical Reference

1. Quek AL, Britton JW, McKeon A, et al: Autoimmune epilepsy: clinical characteristics and response to immunotherapy. Arch Neurol. 2012 May;69(5):582-593. doi: 10.1001/archneurol.2011.2985
2. 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 Feb;49(2):146-154
3. Pittock SJ, Yoshikawa H, Ahlskog JE, et al: Glutamic acid decarboxylase autoimmunity with brainstem, extrapyramidal, and spinal cord dysfunction. Mayo Clin Proc. 2006 Sep;81(9):1207-1214. doi: 10.4065/81.9.1207
4. Klein CJ, Lennon VA, Aston PA, et al: Insights from LGI1 and CASPR2 potassium channel complex autoantibody subtyping. JAMA Neurol. 2013 Feb;70(2):229-234. doi: 10.1001/jamaneurol.2013.592
5. Lancaster E, Martinez-Hernandez E, Dalmau J: Encephalitis and antibodies to synaptic and neuronal cell surface proteins. Neurology. 2011 Jul;77(2):179-189. doi: 10.1212/WNL.0b013e318224afde

Performance

Method Description

Cell-Binding Assay:
Patient specimen is applied to a composite slide containing transfected and nontransfected HEK-293 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, 02/2019)

Indirect Immunofluorescence Assay:
The patient's sample is tested by a standardized immunofluorescence assay that uses a composite frozen section of mouse cerebellum, kidney, and gut tissues. After incubation with sample and washing, fluorescein-conjugated

goat-antihuman IgG is applied. Neuron-specific autoantibodies are identified by their characteristic fluorescence staining patterns. Samples that are scored positive for any neuronal nuclear or cytoplasmic autoantibody are titrated to an endpoint. 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 Jul 18;4(5):e385. doi: 10.1212/NXI.0000000000000385)

Radioimmunoassay:
Duplicate aliquots of patient specimen are incubated with (125)I-labeled antigen. Immune complexes, formed by adding secondary (goat) antihuman immunoglobulin, are pelleted by centrifugation and washed. Gamma emission from the washed pellet is counted, and mean counts per minute (cpm) are compared with results yielded by high positive and negative control sera. Specimen yielding cpm higher than the background cpm yielded by normal human specimens are retested to confirm positivity and titrated as necessary to obtain a value in the linear range of the assay. The antigen binding capacity (nmol per liter) is calculated from the cpm precipitated at a dilution yielding a linear range value.(Griesmann GE, Kryzer TJ, Lennon VA: Autoantibody profiles of myasthenia gravis and Lambert-Eaton myasthenic syndrome. In: NR Rose, RG Hamilton, 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 Dec;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 Nov;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 (1:12.5) 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 antibodies and then incubated with antihuman IgG antibodies (alkaline phosphatase-labeled) for 30 minutes. The strips are again washed to remove unbound antihuman IgG antibodies and nitroblue tetrazolium chloride/5-bromo-4-chloro-3-indolyl phosphate (NBT/BCIP) substrate is added. Alkaline phosphatase enzyme converts the soluble substrate into a colored insoluble product on the membrane to produce 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 Apr 4;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, et al: CRMP-5 neuronal autoantibody: marker of lung cancer and thymoma-related autoimmunity. Ann Neurol 2001 February;49[2]:146-154; Dubey D, Jitprapaikulsan J, Bi H, et al: Amphiphysin-IgG autoimmune neuropathy: A recognizable clinicopathologic syndrome. Neurology. 2019 Nov 12;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
Rochester

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
86255x17
86341 x1
84182-AGNBC (if appropriate)
86256 AGNTC (if appropriate)
86256-AMPIC (if appropriate)
84182-AMIBC (if appropriate)
84182-AN1BC (if appropriate)
86256 AN1TC (if appropriate)
84182-AN2BC (if appropriate)
86256 AN2TC (if appropriate)
86256 AN3TC (if appropriate)
86256 APHTC (if appropriate)
86256 CRMTC (if appropriate)
84182-CRMWC (if appropriate)
86255-DPPCC (if appropriate)
86256-DPPTC (if appropriate)
86256-GABIC (if appropriate)
86255-GFACC (if appropriate)

86256-GFATC (if appropriate)
86255-GL1CC (if appropriate)
86256-GL1TC (if appropriate)
86255 NCDCC (if appropriate)
86256 NCDTC (if appropriate)
86256-NMDIC (if appropriate)
86256 PC2TC (if appropriate)
84182-PCTBC (if appropriate)
86256 PCTTC (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
EPC2	Epilepsy, Autoimm/Paraneo, CSF	In Process

Result ID	Test Result Name	Result LOINC® Value
89079	AGNA-1, CSF	90827-7
5906	Amphiphysin Ab, CSF	90815-2
3852	ANNA-1, CSF	44768-0
7472	ANNA-2, CSF	56959-0
21633	ANNA-3, CSF	90836-8
21650	CRMP-5-IgG, CSF	63216-6
21632	PCA-2, CSF	90843-4
21631	PCA-Tr, CSF	90845-9
21702	GAD65 Ab Assay, CSF	94359-7
61513	NMDA-R Ab CBA, CSF	93502-3
61514	AMPA-R Ab CBA, CSF	93491-9
61515	GABA-B-R Ab CBA, CSF	93426-5
34258	Epilepsy, Interpretation, CSF	69048-7
618897	IFA Notes	48767-8
64280	LGI1-IgG CBA, CSF	94288-8
64282	CASPR2-IgG CBA, CSF	94286-2
64929	DPPX Ab IFA, CSF	82989-5
64927	mGluR1 Ab IFA, CSF	94361-3
605156	GFAP IFA, CSF	94360-5
615866	Neurochondrin IFA, CSF	101451-3