MAYO CLINIC LABORATORIES

Test Definition: MAS1

Myelopathy, Autoimmune/Paraneoplastic Evaluation, Serum

Overview

Useful For

Evaluating patients with suspected autoimmune myelopathy, myelitis, and paraneoplastic myelopathy using serum specimens

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
MSI1	Autoimmune Myelopathy Interp, 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
APBIS	AP3B2 IFA, S	No	Yes
CRMWS	CRMP-5-IgG Western Blot, S	Yes	Yes
DPPIS	DPPX Ab IFA, 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
GL1IS	mGluR1 Ab IFA, S	No	Yes
MOGFS	MOG FACS, S	Yes	Yes
NCDIS	Neurochondrin IFA, S	No	Yes
NIFIS	NIF IFA, S	No	Yes
NMOFS	NMO/AQP4 FACS, S	Yes	Yes
PCABP	Purkinje Cell Cytoplasmic Ab Type 1	No	Yes
PCAB2	Purkinje Cell Cytoplasmic Ab Type 2	No	Yes
SP7IS	Septin-7 IFA, S	No	Yes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed

AGNBS	AGNA-1 Immunoblot, S	No	No
AINCS	Alpha Internexin CBA, S	No	No
AMIBS	Amphiphysin Immunoblot, S	No	No
AN1BS	ANNA-1 Immunoblot, S	No	No
AN2BS	ANNA-2 Immunoblot, S	No	No
DPPCS	DPPX Ab CBA, S	No	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
MOGTS	MOG FACS Titer, S	No	No
NFHCS	NIF Heavy Chain CBA, S	No	No
NIFTS	NIF IFA Titer, S	No	No
NFLCS	NIF Light Chain CBA, S	No	No
NMOTS	NMO/AQP4 FACS Titer, S	No	No
PC1BS	PCA-1 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	No	No
APBCS	AP3B2 CBA, S	No	No
APBTS	AP3B2 IFA Titer, S	No	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
PC1TS	PCA-1 Titer, S	No	No
PC2TS	PCA-2 Titer, S	No	No
SP7CS	Septin-7 CBA, S	No	No
SP7TS	Septin-7 IFA Titer, S	No	No

Testing Algorithm

If the indirect immunofluorescence assay (IFA) patterns suggest antiglial nuclear antibody (AGNA)-1, then AGNA-1 immunoblot and AGNA-1 IFA titer 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 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 antibodies, then ANNA-2 IFA titer, ANNA-2 immunoblot, and ANNA-1 immunoblot will be performed at an additional charge.

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

If the IFA pattern suggests adaptor protein 3 beta 2 (AP3B2) antibodies, then AP3B2 cell-binding assay (CBA) and AP3B2 IFA titer will be performed at an additional charge.

If CRMP-5-IgG western blot is positive, then CRMP-5-IgG IFA titer will be performed at an additional charge.

If the IFA pattern suggests Purkinje cytoplasmic antibody type 1 (PCA-1), then PCA-1 immunoblot and PCA-1 IFA titer will be performed at an additional charge.

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

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

If the IFA pattern suggests metabotropic glutamate receptor 1 (mGluR1) antibody, then mGluR1antibody CBA and mGluR1 antibody IFA titer will be performed at an additional charge.

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

If the neuromyelitis optica/aquaporin-4-IgG (NMO/AQP4-IgG) fluorescence-activated cell sorting (FACS) screen assay requires further investigation, then NMO/AQP4-IgG FACS titration assay will be performed at an additional charge.

If the myelin oligodendrocyte glycoprotein (MOG) FACS screen assay requires further investigation, then MOG FACS titration assay will be performed at an additional charge.

If the IFA pattern suggests neuronal intermediate filament (NIF) antibody, then alpha internexin CBA, NIF heavy chain CBA, NIF light chain CBA, and NIF antibody 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.

If the IFA pattern suggests septin-7 antibody, then septin-7 CBA and septin-7 IFA titer will be performed at an additional charge.

For more information see Autoimmune/Paraneoplastic Myelopathy Evaluation Algorithm-Serum.

Special Instructions

- Autoimmune/Paraneoplastic Myelopathy Evaluation Algorithm-Serum

Method Name

MSI1: Medical Interpretation

AGN1S, AGNTS, AMPHS, APHTS, ANN1S, AN1TS, ANN2S, AN2TS, ANN3S, AN3TS, APBIS, APBTS, CRMTS, DPPIS, DPPTS, GABIS, GFAIS, GFATS, GL1IS, GL1TS, NCDIS, NCDTS, NIFIS, NIFTS, PCABP, PC1TS, PCAB2, PC2TS, SP7IS, SP7TS: Indirect Immunofluorescence Assay (IFA)

GD65S: Radioimmunoassay (RIA)

CRMWS: Western Blot (WB)

AGNBS, AMIBS, AN1BS, AN2BS, PC1BS: Immunoblot (IB)

MOGFS, MOGTS, NMOFS, NMOTS: Flow Cytometry (FCM)

APBCS, DPPCS, GABCS, GFACS, GL1CS, NCDCS, AINCS, NFLCS, NFHCS, SP7CS: Cell Binding Assay (CBA)

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, 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

Patient Preparation:

1. For optimal antibody detection, specimen collection is recommended prior to initiation of immunosuppressant medication or intravenous immunoglobulin treatment.
2. 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.

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 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	
	Frozen	28 days	
	Ambient	72 hours	

Clinical & Interpretive

Clinical Information

Patients with autoimmune myelopathy present with subacute onset and rapid progression of spinal cord symptoms with one or more of the following: weakness, gait difficulties, loss of sensation, neuropathic pain, and bowel and bladder

dysfunction. Clinical history and examination, spinal cord magnetic resonance imaging, and cerebrospinal fluid (CSF) testing may provide clues to an autoimmune diagnosis. Autoimmune myelopathy evaluation of both serum and CSF can assist in the diagnosis (paraneoplastic or idiopathic autoimmune) and aid distinction from other causes of myelopathy (multiple sclerosis, sarcoidosis, vascular disease). Early testing may assist in early diagnosis of occult cancer, prompt initiation of immune therapies, or both.

Reference Values

Test ID	Reporting name	Methodology*	Reference value
MSI1	Autoimmune Myelopathy Interp, S	Medical interpretation	N/A
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
APBIS	AP3B2 IFA, S	IFA	Negative
CRMWS	CRMP-5-IgG Western Blot, S	WB	Negative
DPPIS	DPPX Ab IFA, S	IFA	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
GL1IS	mGluR1 Ab IFA, S	IFA	Negative
MOGFS	MOG FACS, S	FCM	Negative
NCDIS	Neurochondrin IFA, S	IFA	Negative
NIFIS	NIF IFA, S	IFA	Negative
NMOFS	NMO/AQP4 FACS, S	FCM	Negative
PCABP	Purkinje Cell Cytoplasmic Ab Type 1	IFA	Negative
PCAB2	Purkinje Cell Cytoplasmic Ab Type 2	IFA	Negative
SP7IS	Septin-7 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
AINCS	Alpha Internexin CBA, S	CBA	Negative
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

APBCS	AP3B2 CBA, S	CBA	Negative
APBTS	AP3B2 IFA Titer, S	IFA	<1:240
APHTS	Amphiphysin Ab Titer, S	IFA	<1:240
CRMTS	CRMP-5-IgG Titer, S	IFA	<1:240
DPPCS	DPPX Ab CBA, S	CBA	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
MOGTS	MOG FACS Titer, S	FCM	<1:20
NCDCS	Neurochondrin CBA, S	CBA	Negative
NCDTS	Neurochondrin IFA Titer, S	IFA	<1:240
NFHCS	NIF Heavy Chain CBA, S	CBA	Negative
NIFTS	NIF IFA Titer, S	IFA	<1:240
NFLCS	NIF Light Chain CBA, S	CBA	Negative
NMOTS	NMO/AQP4 FACS Titer, S	FCM	<1:5
PC1BS	PCA-1 Immunoblot, S	IB	Negative
PC1TS	PCA-1 Titer, S	IFA	<1:240
PC2TS	PCA-2 Titer, S	IFA	<1:240
SP7CS	Septin-7 CBA, S	CBA	Negative
SP7TS	Septin-7 IFA Titer, S	IFA	<1:240

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

Neuron-restricted patterns of IgG staining that do not fulfill criteria for ANNA-1, ANNA-2, ANNA-3, CRMP-5-IgG, PCA-1, or PCA-2 may be reported as "unclassified anti-neuronal IgG." Complex patterns that include non-neuronal elements may be reported as "uninterpretable."

Interpretation

A positive result is consistent with a diagnosis of autoimmune myelopathy in the appropriate clinical context.

Cautions

Negative results do not exclude a diagnosis of autoimmune myelopathy.

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

Clinical Reference

1. Dubey D, Pittock SJ, Krecke KN, et al: Clinical, radiologic, and prognostic features of myelitis associated with myelin oligodendrocyte glycoprotein autoantibody. JAMA Neurol. 2019 Mar 1;76(3):301-309
2. Zalewski NL, Flanagan EP: Autoimmune and Paraneoplastic Myelopathies. Semin Neurol. 2018 Jun;38(3):278-289
3. Flanagan EP, Hinson SR, Lennon VA, et al: Glial fibrillary acidic protein immunoglobulin G as biomarker of autoimmune astrocytopathy: Analysis of 102 patients. Ann Neurol. 2017 Feb;81(2):298-309
4. Keegan BM, Pittock SJ, Lennon VA: Autoimmune myelopathy associated with collapsin response-mediator protein-5 immunoglobulin G. Ann Neurol. 2008 Apr;63(4):531-534
5. Weinshenker BG, Wingerchuk DM, Vukusic S, et al: Neuromyelitis optica IgG predicts relapse after longitudinally extensive transverse myelitis. Ann Neurol. 2006 Mar;59(3):566-569

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, 02/25/2019)

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 specimen 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: 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 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)

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 Feb;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)

Immunoblot:
All steps are performed at room 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 antibodies and then incubated with anti-human IgG antibodies (alkaline phosphatase-labeled) for 30 minutes. The strips are again washed to remove unbound anti-human IgG antibodies and nitroblue tetrazolium chloride/5-bromo-4-chloro-3-indolyl phosphate 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)

Neuromyelitis Optica -IgG Fluorescence-Activated Cell Sorting Assay/Flow Cytometry:
Human embryonic kidney cells (HEK 293) are transfected transiently with a plasmid (pIRES2- *Aequorea coerulescens* green fluorescent protein) encoding both green fluorescent protein (AcGFP) and aquaporin-4 (AQP4)-M1. After 36 hours, a mixed population of cells (transfected expressing AQP4 on the surface and AcGFP in the cytoplasm and nontransfected lacking AQP4 and AcGFP) are lifted and resuspended in live cell-binding buffer. Cells are incubated with patient serum and an AlexaFluor 647-labeled secondary antibody is added. Two populations are gated based on AcGFP expression: positive (high AQP4 expression) and negative (low or no AQP4 expression). Positivity is based on the ratio (positive >2.0) of the average median fluorescence intensity (MFI) of each cell population (MFI GFP positive:MFI GFP negative).(Fryer JP, Lennon VA, Pittock SJ, et al: AQP4 autoantibody assay performance in clinical laboratory service. Neurol Neuroimmunol Neuroinflamm. 2014 May 22;1[1]:e11. doi: 10.1212/NXI.0000000000000011)

Myelin Oligodendrocyte Glycoprotein -IgG1 Fluorescence-Activated Cell Sorting Assay/Flow Cytometry:
HEK 293 is transfected transiently with a DNA plasmid that allows co-expression of both a reporter fluorescent protein (AcGFP) and full-length myelin oligodendrocyte glycoprotein (MOG). After 36 hours, a mixed population of cells (transfected expressing MOG on the surface and AcGFP in the cytoplasm and nontransfected lacking MOG and AcGFP) are lifted and resuspended in live cell-binding buffer. Cells are incubated with patient serum and an AlexaFluor 647 labeled secondary antibody is added. Two populations are gated based on AcGFP expression: positive (high MOG expression) and negative (low or no MOG expression). Positivity is based on the ratio (positive >2.5) of the average MFI of each cell population (MFI GFP positive:MFI GFP negative).(Unpublished Mayo method)

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
86255 x 15
86053
84182
86363
86341
84182 AGNBS (if appropriate)
86256 AGNTS (if appropriate)
86255 AINCS (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)
86255 APBCS (if appropriate)
86256 APBTS (if appropriate)
86256 APHTS (if appropriate)
86256 CRMTS (if appropriate)

86255 DPPCS (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)
86363 MOGTS (if appropriate)
86255 NCDCS (if appropriate)
86256 NCDTS (if appropriate)
86255 NFHCS (if appropriate)
86255 NFLCS (if appropriate)
86256 NIFTS (if appropriate)
86053 NMOTS (if appropriate)
84182 PC1BS (if appropriate)
86256 PC1TS (if appropriate)
86256 PC2TS (if appropriate)
86255 SP7CS (if appropriate)
86256 SP7TS (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
MAS1	Myelopathy, Autoimm/Paraneo, S	94339-9

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
83107	CRMP-5-IgG Western Blot, S	47401-5
81596	GAD65 Ab Assay, S	30347-9
83138	PCA-2, S	84925-7
9477	PCA-1, S	84924-0
61519	GABA-B-R Ab CBA, S	93428-1
38324	NMO/AQP4 FACS, S	43638-6
65563	MOG FACS, S	90248-6
64930	DPPX Ab IFA, S	82976-2
64928	mGluR1 Ab IFA, S	94347-2
605127	Autoimmune Myelopathy Interp, S	69048-7
618904	IFA Notes	48767-8
605155	GFAP IFA, S	94346-4
606964	NIF IFA, S	96486-6

615867	Neurochondrin IFA, S	101452-1
615875	Septin-7 IFA, S	101465-3
615863	AP3B2 IFA, S	101907-4