Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB	10/3/1970
Sex:	Female
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	01/01/2017 12:34

Autoimmune Neurologic Disease Panel With Reflex, Serum

ARUP test code 3018965

Neuronal Antibody (Amphiphysin)	Negative	(Ref Interval: Negative)

INTERPRETIVE INFORMATION: Amphiphysin Antibody, IgG

Amphiphysin antibody is present in about 5 percent of patients with stiff-person syndrome and is found variably in other causes of paraneoplastic neurological syndrome (PNS). Amphiphysin antibody is mainly associated with small-cell lung cancer and breast tumors.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected	(Ref Interval: None Detected)

PCCA Antibodies not detected, ITPR1 Antibody, IgG by CBA-IFA will not be performed.

ANNA-1, ANNA-2, PCCA-1 or PCCA-Tr(DNER) antibodies not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: Purkinje Cell/Neuronal Nuclear IgG Scrn

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

NMDA Receptor Ab IgG CBA-IFA, Serum	<1:10	(Ref Interval: <1:10)

Antibodies to NMDA were not detected, no additional testing to follow.

INTERPRETIVE INFORMATION: NMDA Receptor Ab IgG CBA-IFA, Serum

NMDA receptor antibody is found in a subset of patients with autoimmune limbic encephalitis and may occur with or without associated tumor. Decreasing antibody levels may be associated with therapeutic response. In addition, positive results have been reported in patients with non-autoimmune phenotypes. A

H=High, L=Low, *=Abnormal, C=Critical

negative test result does not rule out a diagnosis of autoimmune limbic encephalitis. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings. Serum testing should be paired with CSF testing for improved diagnostic sensitivity.

This indirect fluorescent antibody assay utilizes full-length GluN1 transfected cell lines for the detection and semiquantification of NMDA receptor IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

CASPR2 Ab IgG CBA-IFA Screen, Serum	<1:10 (Ref Interval: <1:10)

CASPR2 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: CASPR2 Ab IgG CBA-IFA Screen, Serum

Contactin-associated protein-2 (CASPR2) IgG antibody may occur as part of the voltage-gated potassium channel (VGKC) complex antibodies.

The presence of CASPR2 IgG antibody is associated with a wide spectrum of clinical manifestations, including acquired neuromyotonia, limbic encephalitis, painful neuropathy, and Morvan syndrome. Tumors such as thymoma, small cell lung cancer, and other rarer tumors may occur. The full-spectrum of clinical disorders and tumors associated with the CASPR2 IgG antibody continues to be defined. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings.

This indirect fluorescent antibody assay utilizes CASPR2 transfected cell lines for the detection and semiquantification of the CASPR2 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

LGI1 Ab IgG CBA-IFA Screen, Serum	<1:10 (Ref Interval: <1:10)

LGI1 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: LGI1 Ab IgG CBA-IFA Screen, Serum

Leucine-rich, glioma-inactivated 1 protein (LGI1) IgG antibody may occur as part of the voltage-gated potassium channel (VGKC) complex antibodies.

The presence of LGI1 IgG antibody is mainly associated with limbic encephalitis, hyponatremia, and myoclonic movements. LGI1 IgG antibody is rarely associated with tumors but may occur infrequently in Morvan syndrome, neuromyotonia, and idiopathic epilepsy. The full-spectrum of clinical disorders associated with the LGI1 IgG antibody continues to be defined. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings.

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This indirect fluorescent antibody assay utilizes LGI1 transfected cell lines for the detection and semiquantification of the LGI1 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

NMO/AQP4 Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

Aquaporin-4 Receptor Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: NMO/AQP4 Ab IgG CBA-IFA Screen, Serum
Neuromyelitis optic (NMO) commonly presents with optic neuritis or longitudinally extensive transverse myelitis. Approximately 75 percent of patients with NMO have antibodies to the aquaporin-4 (AQP4) receptor. While the absence of AQP4 receptor antibodies does not rule out a diagnosis of NMO, presence of this antibody is diagnostic for NMO.

This indirect fluorescent antibody assay utilizes AQP4 receptor transfected cell lines for the detection and semiquantification of AQP4 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

CV2 Ab IgG CBA-IFA Screen, Serum	<1:100	(Ref Interval: <1:100)

CV2 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: CV2 Ab IgG CBA-IFA Screen, Serum

CV2 antibodies aid in discriminating between chronic paraneoplastic neurological disorder (PND) and other inflammatory disorders of the nervous system. Anti-CV2 is associated with small-cell lung cancer and thymoma. A negative test result does not rule out a diagnosis of autoimmune neurologic disease. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings.

This indirect fluorescent antibody assay utilizes CV2 transfected cell lines for the detection and semiquantification of the CV2 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

AMPA Receptor Ab IgG CBA-IFA Scrn, Serum	<1:10	(Ref Interval: <1:10)

AMPAR Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: AMPA Receptor Ab IgG CBA-IFA Scrn,

	Serum Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptor (AMPAR) antibody is found in a subset of patients with autoimmune limbic encephalitis and may occur with or without associated tumor. Decreasing antibody levels may be associated with therapeutic response. A negative test result does not rule out a diagnosis of autoimmune encephalitis. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings. This indirect fluorescent antibody assay utilizes AMPAR transfected cell lines for the detection and semiquantification of AMPAR IgG antibody. This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.
GABA-BR Ab IgG CBA-IFA Scrn, Ser	<1:10 (Ref Interval: <1:10) GABA-BR Antibody, IgG is not detected. No further testing will be performed. INTERPRETIVE INFORMATION: GABA-BR Ab IgG CBA-IFA Scrn, Ser Gamma-amino butyric acid receptor, type B (GABA-BR) antibody is found in a subset of patients with autoimmune epilepsy and other autoimmune neurologic phenotypes; it may occur with or without associated tumor. Decreasing antibody levels may be associated with therapeutic response. A negative test result does not rule out a diagnosis of autoimmune neurologic disease. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings. This indirect fluorescent antibody assay utilizes GABA-BR transfected cell lines for the detection and semiquantification of GABA-BR IgG antibody. This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.
MOG Ab IgG CBA-IFA Screen, Serum	<1:10 (Ref Interval: <1:10) MOG Antibody, IgG is not detected. No further testing will be performed. INTERPRETIVE INFORMATION: MOG Ab IgG CBA-IFA Screen, Serum Myelin oligodendrocyte glycoprotein (MOG) antibody is found in a subset of patients with neuromyelitis optica spectrum disorders including optic neuritis and transverse myelitis, brainstem encephalitis, and acute disseminated encephalomyelitis. Persistence of antibody positivity may be associated with a relapsing course. A negative test result does not rule out a diagnosis of CNS demyelinating disease. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings. This indirect fluorescent antibody assay utilizes full-length MOG transfected cell lines for the detection and semiquantification of MOG IgG antibody

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This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

SOX1 Antibody, IgG by Immunoblot, Serum	Negative	(Ref Interval: Negative)

INTERPRETIVE INFORMATION: SOX1 Antibody, IgG by Immunoblot, Serum
SOX1 antibody is detected in patients with Lambert-Eaton myasthenic syndrome (LEMS) and in patients with paraneoplastic cerebellar degeneration (PCD), paraneoplastic and nonparaneoplastic neuropathy. SOX1 antibody is associated with small cell lung cancer. A negative test result does not rule out a diagnosis of LEMS or other causes of paraneoplastic neurological syndrome.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

DPPX Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

DPPX Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: DPPX Ab IgG CBA-IFA Screen, Serum

DPPX antibody is found in a subset of patients with autoimmune encephalitis, and is often associated with prodromal gastrointestinal symptoms and unintentional weight loss. It may occur with or without associated tumor. Decreasing antibody levels may be associated with therapeutic response. A negative test result does not rule out a diagnosis of autoimmune neurologic disease. Results should be interpreted in correlation with the patient's clinical history and other laboratory findings.

This indirect fluorescent antibody assay utilizes DPPX transfected cells for the detection and semiquantification of the DPPX IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

GABA-AR Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

GABA-AR Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: GABA-AR Ab IgG CBA-IFA Screen, Serum
Gamma-aminobutyric acid receptor, type A (GABA-AR) antibody is found in a subset of patients with autoimmune encephalitis or autoimmune epilepsy and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune limbic encephalitis or autoimmune epilepsy. Interpretation of any antineural antibody test requires clinical correlation.

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This indirect fluorescent antibody assay utilizes GABA-AR transfected cell lines for detection and semi-quantification of GABA-AR IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

IgLON5 Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

IgLON5 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: IgLON5 Ab IgG CBA-IFA Screen, Serum
IgLON Family Member 5 (IgLON5) antibody is found in a subset of patients with autoimmune encephalitis or other autoimmune neurologic/neurodegenerative disorders and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of an autoimmune neurologic disorder. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes IgLON5 transfected cell lines for detection and semi-quantification of IgLON5 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

mGluR1 Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

mGluR1 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: mGluR1 Ab IgG CBA-IFA Screen, Serum

Metabotropic glutamate receptor 1 (mGluR1) antibody is found in a subset of patients with autoimmune cerebellar ataxia or autoimmune encephalitis and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune cerebellar ataxia or limbic encephalitis. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes mGluR1 transfected cell lines for detection and semi-quantification of mGluR1 IgG antibody.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Ma2/Ta Antibody, IgG by Immunoblot, Ser	Negative	(Ref Interval: Negative)

INTERPRETIVE INFORMATION: Ma2/Ta Antibody, IgG by Immunoblot, Ser
IgG antibodies to Ma2/Ta are associated with paraneoplastic

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neurologic syndromes with phenotypes most often including a combination of limbic encephalitis, diencephalic encephalitis, and brainstem encephalitis. Patients with anti-Ma2/Ta paraneoplastic neurologic syndromes should be thoroughly evaluated for cancer, including testicular cancer and adenocarcinoma, as neurologic symptoms often precede cancer diagnosis. Use of immune checkpoint inhibitors has also been associated with an increased risk of anti-Ma2 paraneoplastic neurologic disease. Consider sending testing in CSF as well as serum to improve diagnostic yield. Results (positive or negative) should be interpreted in the context of the patient's complete clinical picture, as false positives may occur and a negative result does not exclude the diagnosis of paraneoplastic neurologic disease.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

KLHL11 Ab IgG CBA-IFA Screen, Serum	<1:10	(Ref Interval: <1:10)

KLHL11 Antibody, IgG is not detected. No further testing will be performed.

INTERPRETIVE INFORMATION: KLHL11 Antibody, IgG by CBA-IFA, Serum

IgG antibodies to KLHL11 are associated with paraneoplastic neurologic syndromes with phenotypes most often including a combination of brainstem and cerebellar encephalitis as well as sensorineural hearing loss. Patients with anti-KLHL11 syndromes should be thoroughly evaluated for cancer, including testicular cancer, as neurologic symptoms often precede cancer diagnosis. Consider sending testing in CSF as well as serum to improve diagnostic yield. Coexisting and clinically relevant antineural antibodies have been reported; consider ordering a phenotype-specific panel to assess for these. Results (positive or negative) should be interpreted in the context of the patient's complete clinical picture, as false positives may occur, and a negative result does not exclude the diagnosis of immune-mediated neurologic disease.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

P/Q-Type Calcium Channel Antibody	0.0 pmol/L	(Ref Interval: 0.0-24.5)

INTERPRETIVE INFORMATION: P/Q-Type Calcium Channel Antibody

0.0 to 24.5 pmol/L ..... Negative
24.6 to 45.6 pmol/L ..... Indeterminate
45.7 pmol/L or greater..... Positive

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Voltage-Gated Potassium Channel Ab, Ser	0 pmol/L	(Ref Interval: 0-31)

INTERPRETIVE INFORMATION: Voltage-Gated Potassium Channel (VGKC) Antibody, Serum

H=High, L=Low, *=Abnormal, C=Critical

Negative ..... 31 pmol/L or less
Indeterminate... 32 - 87 pmol/L
Positive ..... 88 pmol/L or greater

Voltage-Gated Potassium Channel (VGKC) antibodies are associated with neuromuscular weakness as found in neuromyotonia (also known as Issacs syndrome) and Morvan syndrome. VGKC antibodies are also associated with paraneoplastic neurological syndromes and limbic encephalitis; however, VGKC antibody-associated limbic encephalitis may be associated with antibodies to leucine-rich, glioma-inactivated 1 protein (LGI1) or contactin-associated protein-2 (CASPR2) instead of potassium channel antigens. A substantial number of VGKC-antibody positive cases are negative for LGI1 and CASPR2 IgG autoantibodies, not all VGKC complex antigens are known. The clinical significance of this test can only be determined in conjunction with the patient's clinical history and related laboratory testing.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Ganglionic Acetylcholine Receptor Ab

0.0 pmol/L (Ref Interval: 0.0-8.4)

REFERENCE INTERVAL: Ganglionic Acetylcholine Receptor Ab

Negative . . . . . 0.0-8.4 pmol/L
Indeterminate. . . . . 8.5-11.6 pmol/L
Positive . . . . . 11.7 pmol/L or greater

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Glutamic Acid Decarboxylase Antibody

<5.0 IU/mL (Ref Interval: 0.0-5.0)

INTERPRETIVE INFORMATION: Glutamic Acid Decarboxylase Antibody

A value greater than 5.0 IU/mL is considered positive for Glutamic Acid Decarboxylase Antibody (GAD Ab). This assay is intended for the semi-quantitative determination of the GAD Ab in human serum. Results should be interpreted within the context of clinical symptoms.

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Neuronal Antibody (Amphiphysin)	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:31:00 PM
Purkinje Cell/Neuronal Nuclear IgG Scrn	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/22/2025 11:21:00 PM
NMDA Receptor Ab IgG CBA-IFA, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
CASPR2 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
LGI1 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
NMO/AQP4 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/22/2025 9:46:00 PM
CV2 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/22/2025 1:33:00 PM

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AMPA Receptor Ab IgG CBA-IFA Scrn, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
GABA-BR Ab IgG CBA-IFA Scrn, Ser	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
MOG Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/22/2025 12:34:00 PM
SOX1 Antibody, IgG by Immunoblot, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:31:00 PM
DPPX Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:49:00 PM
GABA-AR Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:50:00 PM
IgLON5 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:53:00 PM
mGluR1 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:54:00 PM
Ma2/Ta Antibody, IgG by Immunoblot, Ser	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:31:00 PM
KLHL11 Ab IgG CBA-IFA Screen, Serum	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 3:19:00 PM
P/Q-Type Calcium Channel Antibody	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 1:10:00 PM
Voltage-Gated Potassium Channel Ab, Ser	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/25/2025 4:23:00 PM
Ganglionic Acetylcholine Receptor Ab	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/23/2025 5:47:00 AM
Glutamic Acid Decarboxylase Antibody	25-106-161179	4/16/2025 1:28:00 PM	4/21/2025 1:06:37 PM	4/24/2025 5:34:00 PM

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical