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Director of Laboratories

*****Example Report*****

Patient Age/Gender: 50 years Male
Printed: 19-Dec-16 09:30:17

Procedure	Result	Units	Ref Interval	Accession	Collected	Received	Reported/ Verified
Neuronal Antibody (Amphiphysin)	**Positive ***		[Negative]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:08:12
Neuronal Nuclear Abs IgG, Immunoblot	None Detected		[None Detected]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:11:56
Purkinje Cell/Neuronal Nuclear IgG Scrn	**ANNA Detected *f**		[None Detected]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:13:09
Neuronal Nuclear Ab (ANNA) IFA Titer IgG	**1:10 ***		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:45:37
Striated Muscle Antibodies, IgG Screen	**Detected ***		[<1:40]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:02:49
Striated Muscle Antibodies, IgG Titer	**>1:5120 ***		[<1:40]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:37
N-methyl-D-Aspartate Receptor Ab, Serum	**>1:2560 ***		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:14:39
CASPR2 Ab IgG Screen by IFA	Detected f		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:57
CASPR2 Ab IgG Titer by IFA	**1:80 ***		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:57
LGI1 Ab IgG Screen by IFA	<1:10 f		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:57
Neuromyelitis Optica/AQP4-IgG, Serum	<1:10		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:42:40
CV2.1 Antibody IgG Screen by IFA	**Detected ***		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:48:21
CV2.1 Antibody IgG Titer by IFA	**1:10240 ***		[<1:10]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:48:31
Acetylcholine Binding Antibody	**35.2 H**	nmol/L	[0.0-0.4]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:22:50
Acetylcholine Modulating Antibody	45	%	[<=45]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:59:28
Voltage-Gated Calcium Channel (VGCC) Ab	16.0	pmol/L	[0.0-24.5]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:31
Aquaporin-4 Receptor Antibody	**3.0 Hf**	U/mL	[<=2.9]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:39:31
Voltage-Gated Potassium Channel (VGKC)Ab	**45 Hf**	pmol/L	[0-31]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	16-Dec-16 14:49:31
Titin Antibody	**0.46 H**	IV	[0.00-0.45]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 19:27:16
Glutamic Acid Decarboxylase Antibody	<5.0	IU/mL	[0.0-5.0]	16-349-900164	14-Dec-16 20:14:00	14-Dec-16 20:14:00	15-Dec-16 20:03:39

14-Dec-16 20:14:00 Striated Muscle Antibodies, IgG Screen

Striated Muscle Antibodies, IgG detected. Titer results to follow.

14-Dec-16 20:14:00 Neuromyelitis Optica/AQP4-IgG, Serum

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

14-Dec-16 20:14:00 CV2.1 Antibody IgG Screen by IFA

CV2.1 Antibody, IgG is detected. Titer results to follow. Additional charges apply.

14-Dec-16 20:14:00 Purkinje Cell/Neuronal Nuclear IgG Scrn:

Antibodies detected, therefore IFA titer and Immunoblot testing to be performed.

14-Dec-16 20:14:00 CASPR2 Ab IgG Screen by IFA:

Contactin-Associated Protein-2 Antibody, IgG by IFA Titer added.

14-Dec-16 20:14:00 LGI1 Ab IgG Screen by IFA:

Leucine-Rich, Glioma Inactivated Protein 1 Antibody, IgG Screen is <1:10; therefore, no further testing added.

14-Dec-16 20:14:00 Aquaporin-4 Receptor Antibody:

AQP4 antibodies detected by ELISA. IFA testing to follow.

14-Dec-16 20:14:00 Voltage-Gated Potassium Channel (VGKC)Ab:

Leucin-Rich, Glioma Inactivated Protein 1 Antibody, IgG and Contactin-Associated Protein-2 Antibody, IgG with Reflex to Titers added.

***** Abnormal, **#** = Corrected, **C** = Critical, **f** = Footnote, **H** = High, **L** = Low, **t** = Interpretive Text, **@** = Reference Lab

14-Dec-16 20:14:00 Neuronal Antibody (Amphiphysin):
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 cases of paraneoplastic neurological syndrome (PNS). Amphiphysin antibody is mainly associated with small-cell lung cancer and breast tumors.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Neuronal Nuclear Abs IgG, Immunoblot:
INTERPRETIVE INFORMATION: Neuronal Nuclear Abs IgG, Immunoblot

This test detects IgG antineuronal antibodies to Hu, Ri, and Yo antigens. Only the antibodies detected are reported in the result field.

Antineuronal antibodies serve as markers that aid in discriminating between a true paraneoplastic neurological disorder (PND) and other inflammatory disorders of the nervous system. Anti-Hu (antineuronal nuclear antibody, type I) is associated with small-cell lung cancer. Anti-Ri (antineuronal nuclear antibody, type II) is associated with neuroblastoma in children and with fallopian tube and breast cancer in adults. Anti-Yo (anti-Purkinje cell cytoplasmic antibody) is associated with ovarian and breast cancer.

The presence of one or more of these antineuronal antibodies supports a clinical diagnosis of PND and should lead to a focused search for the underlying neoplasm.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Purkinje Cell/Neuronal Nuclear IgG Scrn:
INTERPRETIVE INFORMATION: Purkinje Cell/Neuronal Nuclear IgG Scrn

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Neuronal Nuclear Ab (ANNA) IFA Titer IgG:
INTERPRETIVE INFORMATION: Neuronal Nuclear Ab (ANNA) IFA Titer IgG

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Striated Muscle Antibodies, IgG Screen:
INTERPRETIVE DATA: Striated Muscle Antibodies, IgG Screen

In the presence of acetylcholine receptor (AChR) antibody, striated muscle antibodies, which bind in a cross-striational pattern to skeletal and heart muscle tissue sections, are associated with late-onset myasthenia gravis (MG). Striated muscle antibodies recognize epitopes on three major muscle proteins, including: titin, ryanodine receptor (RyR) and Kv1.4 (an alpha subunit of voltage-gated potassium channel [VGKC]). Isolated

cases of striated muscle antibodies may be seen in patients with certain autoimmune diseases, rheumatic fever, myocardial infarction, and following some cardiotomy procedures.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement A: aruplab.com/CS

14-Dec-16 20:14:00 N-methyl-D-Aspartate Receptor Ab, Serum:
INTERPRETIVE INFORMATION: N-methyl-D-Aspartate Receptor Ab, Serum
Anti-NMDA receptor IgG 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; therefore, clinical correlation must be strongly considered. A negative test result does not rule out a diagnosis of autoimmune limbic encephalitis.

14-Dec-16 20:14:00 CASPR2 Ab IgG Screen by IFA:
TEST INFORMATION: CASPR2 Ab IgG Screen by IFA

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 contactin-associated protein-2 (CASPR2) transfected cell lines for the detection and semi-quantification of the CASPR2 IgG antibody.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 CASPR2 Ab IgG Titer by IFA:
TEST INFORMATION: CASPR2 Ab Titer IgG by IFA

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 LGI1 Ab IgG Screen by IFA:
TEST INFORMATION: LGI1 Ab IgG Screen by IFA

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.

This indirect fluorescent antibody assay utilizes leucine-rich, glioma-inactivated 1 protein (LGI1) transfected cell lines for the detection and semi-quantification of the LGI1 IgG antibody.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Neuromyelitis Optica/AQP4-IgG, Serum:
INTERPRETIVE INFORMATION: Neuromyelitis Optica/AQP4-IgG w/Rfx, Ser

Diagnosis of neuromyelitis optica (NMO) requires the presence of longitudinally extensive acute myelitis (lesions extending over 3 or more vertebral segments) and optic neuritis. Approximately 75 percent of patients with NMO express 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.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 CV2.1 Antibody IgG Screen by IFA:
INTERPRETIVE INFORMATION: CV2.1 Antibody IgG Screen by IFA

CV2.1 antibodies aid in discriminating between chronic paraneoplastic neurological disorder (PND) and other inflammatory disorders of the nervous system. Anti-CV2.1 is associated with small-cell lung cancer and thymoma.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

14-Dec-16 20:14:00 CV2.1 Antibody IgG Titer by IFA:

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

14-Dec-16 20:14:00 Acetylcholine Binding Antibody:
INTERPRETIVE INFORMATION: Acetylcholine Binding Ab

Negative ..... 0.0 - 0.4 nmol/L
Positive ..... 0.5 nmol/L or greater

Approximately 85-90 percent of patients with myasthenia gravis (MG) express antibodies to the acetylcholine receptor (AChR), which can be divided into binding, blocking, and modulating antibodies. Binding antibody can activate complement and lead to loss of AChR. Blocking antibody may impair binding of acetylcholine to the receptor, leading to poor muscle contraction. Modulating antibody causes receptor endocytosis resulting in loss of AChR expression, which correlates most closely with clinical severity of disease.

Approximately 10-15 percent of individuals with confirmed myasthenia gravis have no measurable binding, blocking, or modulating antibodies.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

14-Dec-16 20:14:00 Acetylcholine Modulating Antibody:
INTERPRETIVE INFORMATION: Acetylcholine Modulating Ab

Negative ..... 0-45 percent modulating
Positive ..... 46 percent or greater modulating

Approximately 85-90 percent of patients with myasthenia gravis (MG) express antibodies to the acetylcholine receptor (AChR), which can be divided into binding, blocking, and modulating antibodies. Binding antibody can activate complement and lead to loss of AChR. Blocking antibody may impair binding of acetylcholine to the receptor, leading to poor muscle contraction. Modulating antibody causes receptor endocytosis resulting in loss of AChR expression, which correlates most closely with clinical severity of disease. Approximately 10-15 percent of individuals with confirmed myasthenia gravis have no measurable binding, blocking, or modulating antibodies.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

14-Dec-16 20:14:00 Voltage-Gated Calcium Channel (VGCC) Ab:
INTERPRETIVE INFORMATION: Voltage-Gated Calcium Channel (VCGG) Ab

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

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

14-Dec-16 20:14:00 Aquaporin-4 Receptor Antibody:
INTERPRETIVE INFORMATION: Aquaporin-4 Receptor Antibody

Negative ..... 2.9 U/mL or less
Positive ..... 3.0 U/mL or greater

Approximately 75 percent of patients with neuromyelitis optica (NMO) express antibodies to the aquaporin-4 (AQP4)receptor. Diagnosis of NMO requires the presence of longitudinally extensive acute myelitis (lesions extending over 3 or more vertebral segments)and optic neuritis. While absense of antibodies to the AQP4 receptor does not rule out the diagnosis of NMO, presence of this antibody is diagnostic for NMO.

14-Dec-16 20:14:00 Voltage-Gated Potassium Channel (VGKC)Ab:

INTERPRETIVE INFORMATION: Voltage-Gated Potassium
ChanneL (VGKC) Ab

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 (Caspr-2) instead of potassium channel antigens. The clinical significance of this test can only be determined in conjunction with the patient's clinical history and related laboratory testing.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Titin Antibody:
INTERPRETIVE INFORMATION: Titin Antibody

Negative ..... 0.00 - 0.45 IV
Indeterminate ... 0.46 - 0.71 IV
Positive ..... 0.72 IV or greater

The presence of titin antibody is associated with late onset of myasthenia gravis (MG) and a variable risk for thymoma. Titin antibody may be detected in 20-40 percent of all patients with MG; higher frequency in older population as a whole.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement D: aruplab.com/CS

14-Dec-16 20:14:00 Glutamic Acid Decarboxylase Antibody:
INTERPRETIVE INFORMATION: Glutamic Acid Decarboxylase Antibody

A value greater than 5.0 IU/mL is considered positive for Glutamic Acid Decarboxylase Antibody.