PATIENT REPORT

500 Chipeta Way, Salt Lake City, Utah 84108-1221 phone: 801-583-2787, toll free: 800-522-2787 Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

	eceived: 2/6/2025 09	:36 MST	Report/Verified: 2/6/2025 09:54
Reflex Ser Procedure	Result	Units	MST Reference Interval
Weuronal Antibody (Amphiphysin)		011203	[Negative]
Purkinje Cell/Neuronal Nuclear	PCCA Detected * f1 i	2	[None Detected]
IgG Scrn			
IMDA Receptor Ab IgG CBA-IFA, Serum	1:320 * f2 i3		[<1:10]
CASPR2 Ab IgG CBA-IFA Screen, Serum	Detected * t1 i4		[<1:10]
GI1 Ab IgG CBA-IFA Screen,Serum	Detected * t2 i5		[<1:10]
MO/AQP4 Ab IgG CBA-IFA Screen, Serum	Detected * t3 i6		[<1:10]
CV2 Ab IgG CBA-IFA Screen, Serum	Detected * t4 i7		[<1:100]
MPA Receptor Ab IgG CBA-IFA Scrn,Serum	Detected * t5 i8		[<1:10]
GABA-BR Ab IgG CBA-IFA Scrn, Ser	Detected * t6 i9		[<1:10]
MOG Ab IgG CBA-IFA Screen, Serum	Detected * t7 i10		[<1:10]
SOX1 Antibody,IgG by Immunoblot, Gerum	Low Positive * f3 i1:	L	[Negative]
OPPX Ab IgG CBA-IFA Screen, Serum	Detected * t8 i12		[<1:10]
GABA-AR Ab IgG CBA-IFA Screen, Gerum	Detected * t9 i13		[<1:10]
IgLON5 Ab IgG CBA-IFA Screen, Gerum	Detected * t10 i14		[<1:10]
nGluR1 Ab IgG CBA-IFA Screen, Gerum	Detected * tll il5		[<1:10]
Ma2/Ta Antibody,IgG by Immunoblot,Ser	High Positive * 116		[Negative]
KLHL11 Ab IgG CBA-IFA Screen, Serum	Detected * t12 i17		[<1:10]
P/Q-Type Calcium Channel Antibody	55.0 H il8	pmol/L	[0.0-24.5]
Voltage-Gated Potassium Channel	55 H i19	pmol/L	[0-31]
Ganglionic Acetylcholine Receptor Ab	15.0 H 120	pmol/L	[0.0-8.4]
Glutamic Acid Decarboxylase	10.0 H i21	IU/mL	[0.0-5.0]
Neuronal Antibody IgG,	eceived: 2/6/2025 09	:36 MST	Report/Verified: 2/6/2025 09:54
mmunoblot, Ser			MST
rocedure	Result	Units	Reference Interval

<sup>\*=</sup>Abnormal, #=Corrected, C=Critical, f=Result Footnote, H-High, i-Test Information, L-Low, t-Interpretive Text, @=Performing lab

Unless otherwise indicated, testing performed at:

ARUP Accession: 25-037-900084

ARUP Laboratories Report Request ID: 20291781

500 Chipeta Way, Salt Lake City, UT 84108 **Printed:** 2/10/2025 09:42 MST

Laboratory Director: Jonathan R. Genzen, MD, PhD Page 1 of 15

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

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Unknown

Neuronal Antibody IgG, Immunoblot, Ser	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure Neuronal Nuclear Ab (Ri) IgG, Serum	Result IB, Positive * 123	Units	Reference Interval [Negative]
Purkinje Cell Ab (Yo) IgG,IB, Purkinje Cell Ab (TR/DNER) Ig IB,Ser		1 124	[Negative] [Negative]
Purkinje Cell Ab Titer, IgG	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure Purkinje Cell Antibody Titer	Result IgG 1:80 * <sup>126</sup>	Units	Reference Interval [<1:10]
AMPA Rptr Ab IgG Titer by CBA-IFA, Ser	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure AMPA Receptor Ab IgG CBA-IFA Titer,Ser	Result 1:2560 * <sup>127</sup>	Units	Reference Interval [<1:10]
CASPR2 Ab IgG Titer by CBA-IFA, Ser	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure CASPR2 Ab IgG CBA-IFA Titer, Serum	Result 1:640 * <sup>128</sup>	Units	Reference Interval [<1:10]
NMO/AQP4-Ab IgG Titer by CBA-IFA Ser	,  Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure NMO/AQP4 Ab IgG CBA-IFA Titer Serum	Result , 1:80 * <sup>129</sup>	Units	Reference Interval [<1:10]
CV2 Ab IgG Titer by CBA-IFA, Ser	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure CV2 Ab IgG CBA-IFA Titer, Seru	Result m 1:3200 * <sup>130</sup>	Units	Reference Interval [<1:100]
DPPX Ab IgG Titer by CBA-IFA, Se	r   Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure DPPX Ab IgG CBA-IFA Titer, Ser	Result um 1:40 * <sup>i31</sup>	Units	Reference Interval [<1:10]
GABA-A Receptor IgG CBA-IFA Titer, Serum	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure GABA-AR Ab IgG CBA-IFA Titer, Serum	Result 1:320 * <sup>i32</sup>	Units	Reference Interval [<1:10]
GABA-B Rptr Ab IgG Titer by CBA-IFA, Ser	Received: 2/6/2025	09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure GABA-BR Ab IgG CBA-IFA Titer,	Result	Units	Reference Interval [<1:10]

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phone: 801-583-2787, toll free: 800-522-2787

Patient Age/Sex: Unknown Jonathan R. Genzen, MD, PhD, Chief Medical Officer

IgLON5 Ab IgG CBA-IFA Titer, Serum	Received: 2/6/20	25 09:36 MST	Report/Verified: 2/6/2025 09:54 MST
Procedure	Result	Units	Reference Interval

IgLON5 Ab IgG CBA-IFA Titer, 1:80 \* 134 [<1:10]

Serum

KLHL11 Ab IgG CBA-IFA Titer, Received: 2/6/2025 09:36 MST Report/Verified: 2/6/2025 09:54

Serum MST

Procedure Result Units Reference Interval

1:320 \* 135 KLHL11 Ab IgG CBA-IFA Titer, [<1:10]

Serum

LGI1 Ab IgG Titer by CBA-IFA, Ser Received: 2/6/2025 09:36 MST Report/Verified: 2/6/2025 09:54

Procedure Result Units Reference Interval

LGI1 Ab IgG CBA-IFA Titer, Serum 1:1280 \* i36 [<1:10]

Report/Verified: 2/6/2025 09:54 mGluR1 Ab IgG CBA-IFA Titer, Received: 2/6/2025 09:36 MST

MST Serum

Result Reference Interval Procedure Units

1:160 \* 137 mGluR1 Ab IgG CBA-IFA Titer, [<1:10]

Serum

MOG Ab IgG Titer by CBA-IFA, Ser | Received: 2/6/2025 09:36 MST Report/Verified: 2/6/2025 09:54

Procedure Result Units Reference Interval

1:160 \* 138 MOG Ab IgG CBA-IFA Titer, Serum [<1:10]

#### Interpretive Text

2/6/2025 09:34 MST (CASPR2 Ab IgG CBA-IFA Screen, Serum)

CASPR2 Antibody, IqG is detected. Titer results to follow.

2/6/2025 09:34 MST (LGI1 Ab IgG CBA-IFA Screen, Serum) t2:

LGI1 Antibody, IgG is detected. Titer results to follow.

t3: 2/6/2025 09:34 MST (NMO/AQP4 Ab IgG CBA-IFA Screen, Serum)

Aquaporin-4 Receptor Antibody, IgG is detected. Titer results to follow.

2/6/2025 09:34 MST (CV2 Ab IgG CBA-IFA Screen, Serum) t4:

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

2/6/2025 09:34 MST (AMPA Receptor Ab IgG CBA-IFA Scrn, Serum) t5:

AMPAR Antibody, IgG is detected. Titer results to follow.

2/6/2025 09:34 MST (GABA-BR Ab IgG CBA-IFA Scrn, Ser) t6:

GABA-BR Antibody, IgG is detected. Titer results to follow.

t7: 2/6/2025 09:34 MST (MOG Ab IgG CBA-IFA Screen, Serum)

MOG Antibody, IgG is detected. Titer results to follow.

t8: 2/6/2025 09:34 MST (DPPX Ab IgG CBA-IFA Screen, Serum)

DPPX Antibody, IgG is detected. Titer results to follow.

2/6/2025 09:34 MST (GABA-AR Ab IgG CBA-IFA Screen, Serum) t.9:

GABA-AR Antibody, IgG is detected. Titer results to follow.

2/6/2025 09:34 MST (IgLON5 Ab IgG CBA-IFA Screen, Serum) t10:

IgLON5 Antibody, IgG is detected. Titer results to follow.

t11: 2/6/2025 09:34 MST (mGluR1 Ab IgG CBA-IFA Screen, Serum)

mGluR1 Antibody, IgG is detected. Titer results to follow.

t12: 2/6/2025 09:34 MST (KLHL11 Ab IgG CBA-IFA Screen, Serum)

Laboratory Director: Jonathan R. Genzen, MD, PhD

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phone: 801-583-2787, toll free: 800-522-2787

Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

## Interpretive Text

t12: 2/6/2025 09:34 MST (KLHL11 Ab IgG CBA-IFA Screen, Serum)

KLHL11 Antibody, IgG is detected. Titer results to follow.

#### Result Footnote

f1: Purkinje Cell/Neuronal Nuclear IgG Scrn

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

f2: NMDA Receptor Ab IgG CBA-IFA, Serum

Antibodies to NMDA were detected; titer was performed at an additional charge.

The ExTINGUISH Trial (safety and efficacy of Inebilizumab in anti-NMDA receptor encephalitis, NCT04372615) is actively recruiting patients. To learn more, or to refer your patient, call 1-844-427-2465, email ExTINGUISH@hsc.utah.edu, or visit https://neuronext.org/projects/nnll1-extinguish.

f3: SOX1 Antibody, IgG by Immunoblot, Serum

Low positive reactivity to SOX1 detected. Strong clinical correlation is recommended.

f4: Purkinje Cell Ab (Yo) IgG, IB, Ser

Low positive reactivity to Yo detected. Strong clinical correlation is recommended.

#### Test Information

i1: 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 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.

i2: Purkinje Cell/Neuronal Nuclear IgG Scrn

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.

i3: NMDA Receptor Ab IgG CBA-IFA, Serum

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 negative test

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

#### Test Information

i3: NMDA Receptor Ab IgG CBA-IFA, Serum

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.

i4: CASPR2 Ab IgG CBA-IFA Screen, Serum

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.

i5: LGI1 Ab IgG CBA-IFA Screen, Serum 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

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

#### Test Information

i5: LGI1 Ab IgG CBA-IFA Screen, Serum

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 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.

i6: NMO/AQP4 Ab IgG CBA-IFA Screen, Serum

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.

i7: CV2 Ab IgG CBA-IFA Screen, Serum

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.

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Unknown

#### Test Information

i8: AMPA Receptor Ab IgG CBA-IFA Scrn, Serum INTERPRETIVE INFORMATION: AMPA Receptor Ab IgG CBA-IFA Scrn,

Serum

Alpha-amino-3-hydroxy-5-methyl-4-isoxazoleproprionic 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.

i9: GABA-BR Ab IgG CBA-IFA Scrn, Ser 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.

i10: MOG Ab IgG CBA-IFA Screen, Serum
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.

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

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Unknown

#### Test Information

MOG Ab IgG CBA-IFA Screen, Serum

This indirect fluorescent antibody assay utilizes full-length MOG transfected cell lines for the detection and semiquantification of MOG 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.

i11: SOX1 Antibody, IgG by Immunoblot, Serum

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.

i12: DPPX Ab IgG CBA-IFA Screen, Serum

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 i13:

INTERPRETIVE INFORMATION: GABA-AR Ab IgG CBA-IFA Screen,

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

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Unknown

#### Test Information

i13: GABA-AR Ab IgG CBA-IFA Screen, Serum

autoimmune limbic encephalitis or autoimmune epilepsy. Interpretation of any antineural antibody test requires clinical correlation.

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.

i14: IgLON5 Ab IgG CBA-IFA Screen, Serum

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.

i15: mGluR1 Ab IgG CBA-IFA Screen, Serum

INTERPRETIVE INFORMATION: mGluR1 Ab IqG 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.

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Unknown

#### Test Information

i16: Ma2/Ta Antibody, IgG by Immunoblot, Ser INTERPRETIVE INFORMATION: Ma2/Ta Antibody, IgG by

IgG antibodies to Ma2/Ta are associated with paraneoplastic 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.

i17: KLHL11 Ab IgG CBA-IFA Screen, Serum
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.

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i18: P/Q-Type Calcium Channel Antibody

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

\*=Abnormal, #=Corrected, C=Critical, f=Result Footnote, H-High, i-Test Information, L-Low, t-Interpretive Text, @=Performing lab

Unless otherwise indicated, testing performed at:

ARUP Laboratories

500 Chipeta Way, Salt Lake City, UT 84108 Laboratory Director: Jonathan R. Genzen, MD, PhD **ARUP Accession**: 25-037-900084 **Report Request ID**: 20291781

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PATIENT REPORT

500 Chipeta Way, Salt Lake City, Utah 84108-1221 phone: 801-583-2787, toll free: 800-522-2787

Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

#### Test Information

i18: P/Q-Type Calcium Channel 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.

i19: Voltage-Gated Potassium Channel Ab, Ser

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

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.

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i20: Ganglionic Acetylcholine Receptor Ab

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.

i21: 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 (GAD Ab). This assay is intended for the semi-quantitative

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PATIENT REPORT

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex: Unknown

#### Test Information

Glutamic Acid Decarboxylase Antibody

determination of the GAD Ab in human serum. Results should be interpreted within the context of clinical symptoms.

Neuronal Nuclear Ab (Hu) IgG, IB, Serum i22:

INTERPRETIVE INFORMATION: Neuronal Nuclear Ab IgG,

Immunoblot, Ser

This test detects IgG antineuronal antibodies to Hu, Ri, Yo and Tr (DNER) antigens.

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. Anti-Tr(DNER) is associated with Hodgkin's lymphoma.

The presence of one or more of these antineuronal antibodies detected by both immunoblot (IB) and immunofluorescence (IFA) supports a clinical diagnosis of PND and should lead to a focused search for the underlying neoplasm. A positive IB result but negative IFA result is of questionable clinical significance. Thus, strong clinical correlation is recommended.

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.

Neuronal Nuclear Ab (Ri) IgG, IB, Serum i23:

INTERPRETIVE INFORMATION: Neuronal Nuclear Ab (Ri) IgG, IB,

Serum

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 Ab (Yo) IgG, IB, Ser i24:

INTERPRETIVE INFORMATION: Purkinje Cell Ab (Yo) IgG, IB, Ser

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 Ab (TR/DNER) IgG, IB, Ser i25:

INTERPRETIVE INFORMATION: Purkinje Cell Ab (TR/DNER) IgG,

IB, Ser

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

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PATIENT REPORT

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

# Test Information

i25: Purkinje Cell Ab (TR/DNER) IgG, IB, Ser

Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

i26: Purkinje Cell Antibody Titer IgG

INTERPRETIVE INFORMATION: Purkinje Cell Ab Titer, IgG

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.

i27: AMPA Receptor Ab IgG CBA-IFA Titer, Ser

INTERPRETIVE INFORMATION: AMPA Receptor Ab IgG CBA-IFA

Titer, Ser

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.

i28: CASPR2 Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: CASPR2 Ab IqG CBA-IFA Titer, Serum

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.

i29: NMO/AQP4 Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: NMO/AQP4 Ab IgG CBA-IFA Titer,

Serum

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.

i30: CV2 Ab IgG CBA-IFA Titer, Serum

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

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.

i31: DPPX Ab IgG CBA-IFA Titer, Serum

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

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

#### Test Information

i32: GABA-AR Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: GABA-AR Ab IqG CBA-IFA Titer,

Serum

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.

i33: GABA-BR Ab IgG CBA-IFA Titer, Ser

INTERPRETIVE INFORMATION: GABA-BR Ab IgG CBA-IFA Titer, Ser

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.

i34: IgLON5 Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: IgLON5 Ab IgG CBA-IFA Titer, Serum

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.

i35: KLHL11 Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: KLHL11 Ab IgG CBA-IFA Titer,

Serum

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.

i36: LGI1 Ab IgG CBA-IFA Titer, Serum

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

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.

i37: mGluR1 Ab IgG CBA-IFA Titer, Serum

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

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.

i38: MOG Ab IgG CBA-IFA Titer, Serum

INTERPRETIVE INFORMATION: MOG Ab IgG CBA-IFA Titer, Serum

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Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

#### Test Information

i38: MOG Ab IgG CBA-IFA Titer, Serum

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