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**PATIENT REPORT**

Patient Age/Sex: Unknown

**Specimen Collected: 19-Dec-22 08:00**

**Extended Autoimmune Encephalitis Panel** | **Received: 19-Dec-22 08:06** | **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| N-methyl-D-Aspartate Receptor Ab,Serum | **1:80** * f1 i1 | | [<1:10] |
| CASPR2 Ab IgG Screen by IFA, Serum | **Detected** * t1 i2 | | [<1:10] |
| LGI1 Ab IgG Screen by IFA,Serum | **Detected** * t2 i3 | | [<1:10] |
| Neuromyelitis Optica/AQP4-IgG, Serum | **Detected** * t3 i4 | | [<1:10] |
| AMPA Receptor Ab IgG Screen, Serum | **Detected** * t4 i5 | | [<1:10] |
| GABA-B Receptor Ab IgG Screen, Serum | **Detected** * t5 i6 | | [<1:10] |
| MOG Antibody IgG Screen,Serum | **Detected** * t6 i7 | | [<1:10] |
| DPPX Ab IgG CBA IFA Screen,Serum | **Detected** * t7 i8 | | [<1:10] |
| GABA-AR Ab IgG CBA-IFA Screen, Serum | **Detected** * t8 i9 | | [<1:10] |
| IgLON5 Ab IgG CBA-IFA Screen, Serum | **Detected** * t9 i10 | | [<1:10] |
| mGluR1 Ab IgG CBA-IFA Screen, Serum | **Detected** * t10 i11 | | [<1:10] |
| Voltage-Gated Potassium Channel Ab,Ser | **55** H i12 | pmol/L | [0-31] |
| Glutamic Acid Decarboxylase Antibody | **10.0** H i13 | IU/mL | [0.0-5.0] |

**AMPA Receptor IgG Ab Serum, Titer** | **Received: 19-Dec-22 08:06** | **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| AMPA Receptor Ab IgG Titer,Serum | **1:40** * i14 | | [<1:10] |

**CASPR2 Ab Titer IgG by IFA, Serum** | **Received: 19-Dec-22 08:06** | **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| CASPR2 Ab IgG Titer by IFA,Serum | **1:80** * i15 | | [<1:10] |

**Neuromyelitis Optica/AQP4-IgG Titer Ser** | **Received: 19-Dec-22 08:06** | **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| Neuromyelitis Optica/AQP4-IgG Titer Ser | **1:40** * i16 | | [<1:10] |

**DPPX IgG Ab Titer, Serum** | **Received: 19-Dec-22 08:06** | **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| DPPX Ab IgG CBA IFA Titer,Serum | **1:160** * | | [<1:10] |

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

**GABA-A Receptor IgG CBA-IFA Titer, Serum** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| GABA-AR Ab IgG CBA-IFA Titer, Serum | **1:80** * i17 | | [<1:10] |

**GABA-B Receptor IgG Ab Serum, Titer** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| GABA-B Receptor Ab IgG Titer, Serum | **1:80** * i18 | | [<1:10] |

**IgLON5 Ab IgG CBA-IFA Titer, Serum** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| IgLON5 Ab IgG CBA-IFA Titer, Serum | **1:80** * i19 | | [<1:10] |

**LGI1 Ab Titer IgG by IFA, Serum** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| LGI1 Ab IgG Titer by IFA,Serum | **1:80** * i20 | | [<1:10] |

**MOG IgG Antibody Serum, Titer** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| MOG Antibody IgG Titer,Serum | **1:320** * i21 | | [<1:10] |

**mGluR1 Ab IgG CBA-IFA Titer, Serum** |**Received: 19-Dec-22 08:06** **Report/Verified: 19-Dec-22 08:15**

| Procedure | Result | Units | Reference Interval |
|---|---|---|---|
| mGluR1 Ab IgG CBA-IFA Titer, Serum | **1:80** * i22 | | [<1:10] |

## Interpretive Text

t1: 19-Dec-22 08:00 (CASPR2 Ab IgG Screen by IFA, Serum)
CASPR2 Antibody, IgG is detected. Titer results to follow.
t2: 19-Dec-22 08:00 (LGI1 Ab IgG Screen by IFA, Serum)
LGI1 Antibody, IgG is detected. Titer results to follow.
t3: 19-Dec-22 08:00 (Neuromyelitis Optica/AQP4-IgG, Serum)
Aquaporin-4 Receptor Antibody, IgG is detected. Titer results to follow.
t4: 19-Dec-22 08:00 (AMPA Receptor Ab IgG Screen, Serum)
AMPAR Antibody, IgG is detected. Titer results to follow.
t5: 19-Dec-22 08:00 (GABA-B Receptor Ab IgG Screen, Serum)
GABA-BR Antibody, IgG is detected. Titer results to follow.
t6: 19-Dec-22 08:00 (MOG Antibody IgG Screen, Serum)
MOG Antibody, IgG is detected. Titer results to follow.
t7: 19-Dec-22 08:00 (DPPX Ab IgG CBA IFA Screen, Serum)
DPPX Antibody, IgG is detected. Titer results to follow.
t8: 19-Dec-22 08:00 (GABA-AR Ab IgG CBA-IFA Screen, Serum)
GABA-AR Antibody, IgG is detected. Titer results to follow.
t9: 19-Dec-22 08:00 (IgLON5 Ab IgG CBA-IFA Screen, Serum)
IgLON5 Antibody, IgG is detected. Titer results to follow.
t10: 19-Dec-22 08:00 (mGluR1 Ab IgG CBA-IFA Screen, Serum)
mGluR1 Antibody, IgG is detected. Titer results to follow.

## Result Footnote

f1: N-methyl-D-Aspartate Receptor Ab, Serum

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

Clinical trials for anti-NMDA receptor encephalitis are currently underway (clinicaltrials.gov).

## Test Information

i1: 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.

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: CASPR2 Ab IgG Screen by IFA, Serum

INTERPRETIVE INFORMATION: CASPR2 Ab IgG by IFA, 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 contactin-associated protein-2 (CASPR2) transfected cell lines for the detection and semi-quantification 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.

i3: LGI1 Ab IgG Screen by IFA, Serum

INTERPRETIVE INFORMATION: LGI1 Ab IgG Screen by IFA, Serum

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

## Test Information

i3: LGI1 Ab IgG Screen by IFA, Serum

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.

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: Neuromyelitis Optica/AQP4-IgG, Serum

INTERPRETIVE INFORMATION: Neuromyelitis Optica/AQP4-IgG, Serum

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.

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: AMPA Receptor Ab IgG Screen, Serum

INTERPRETIVE INFORMATION: AMPA Receptor Ab IgG Screen, 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; therefore, clinical correlation must be strongly considered. A negative test result does not rule out a diagnosis of autoimmune encephalitis.

This indirect fluorescent antibody assay utilizes AMPAR transfected cell lines for the detection and semi-quantification 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

## Test Information

i5: AMPA Receptor Ab IgG Screen, Serum

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

i6: GABA-B Receptor Ab IgG Screen, Serum

INTERPRETIVE INFORMATION: GABA Receptor Ab IgG Screen, Serum

Gamma-amino butyric acid receptor, type B (GABA-BR) 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 encephalitis.

This indirect fluorescent antibody assay utilizes GABA-BR transfected cell lines for the detection and semi-quantification 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.

i7: MOG Antibody IgG Screen, Serum

INTERPRETIVE INFORMATION: MOG Antibody IgG 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. 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 CNS demyelinating disease or autoimmune encephalitis.

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

i8: DPPX Ab IgG CBA IFA Screen, Serum

INTERPRETIVE INFORMATION: DPPX Ab IgG CBA IFA Screen, Serum

Anti-DPPX IgG antibody is found in a subset of patients with autoimmune 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.

## Test Information

i8: DPPX Ab IgG CBA IFA Screen, Serum

This indirect fluorescent antibody cell-based assay (CBA) utilizes dipeptidyl aminopeptidase-like protein 6 (DPPX) transfected cells for the detection 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 US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

i9: GABA-AR Ab IgG CBA-IFA Screen, Serum

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.

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.

i10: 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.

i11: mGluR1 Ab IgG CBA-IFA Screen, Serum

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

## Test Information

i11: 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.

i12: 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.

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.

i13: 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 determination of the GAD Ab in human serum. Results should be interpreted within the context of clinical symptoms.

## Test Information

i14: AMPA Receptor Ab IgG Titer, Serum
INTERPRETIVE INFORMATION: AMPA Receptor Ab IgG 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.

i15: CASPR2 Ab IgG Titer by IFA, Serum
INTERPRETIVE INFORMATION: CASPR2 Ab Titer IgG by IFA, 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.

i16: Neuromyelitis Optica/AQP4-IgG Titer Ser
INTERPRETIVE INFORMATION: Neuromyelitis Optica/AQP4-IgG 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.

i17: GABA-AR Ab IgG CBA-IFA Titer, Serum
INTERPRETIVE INFORMATION: GABA-AR 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.

i18: GABA-B Receptor Ab IgG Titer, Serum
INTERPRETIVE INFORMATION: GABA-B Receptor Ab IgG 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.

i19: 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.

## Test Information

i20: LGI1 Ab IgG Titer by IFA, Serum

INTERPRETIVE INFORMATION: LGI1 Ab Titer IgG by IFA, 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.

i21: MOG Antibody IgG Titer, Serum

INTERPRETIVE INFORMATION: MOG Antibody IgG 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.

i22: 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.