

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

Physician: Doctor, Example

**Patient: Patient, Example**

**DOB:** 12/31/1999  
**Sex:** Male  
**Patient Identifiers:** 01234567890ABCD, 012345  
**Visit Number (FIN):** 01234567890ABCD  
**Collection Date:** 01/01/2017 12:34

**Motor and Sensory Neuropathy Evaluation with Reflex to Titer and Neuronal Immunoblot**

ARUP test code 2007966

MAG Antibody, IgM Elisa

**2000 TU H (Ref Interval: 0-999)**

INTERPRETIVE INFORMATION: MAG Antibody, IgM ELISA

An elevated IgM antibody concentration greater than 999 TU against myelin-associated glycoprotein (MAG) suggests active demyelination in peripheral neuropathy. A normal concentration (less than 999 TU) generally rules out an anti-MAG antibody-associated peripheral neuropathy.

TU=Titer Units

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.

SGPG Antibody, IgM

**2.00 IV H (Ref Interval: 0.00-0.99)**

INTERPRETIVE INFORMATION: SGPG Antibody, IgM

The majority of sulfate-3-glucuronyl paragloboside (SGPG) IgM-positive sera will show reactivity against MAG. Patients who are SGPG IgM positive and MAG IgM negative may have multi-focal motor neuropathy with conduction block.

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Purkinje Cell/Neuronal Nuclear IgG Scrn

**ANNA Detected \* (Ref Interval: None Detected)**

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

INTERPRETIVE INFORMATION: Purkinje Cell/Neuronal Nuclear IgG Scrn

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

Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com  
500 Chipeta Way, Salt Lake City, UT 84108-1221  
Jonathan R. Genzen, MD, PhD, Laboratory Director

Patient: Patient, Example  
ARUP Accession: 22-124-100617  
Patient Identifiers: 01234567890ABCD, 012345  
Visit Number (FIN): 01234567890ABCD  
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Asialo-GM1 Antibodies, IgG/IgM	100	IV	H	(Ref Interval: 0-50)
GM1 Antibodies, IgG/IgM	100	IV	H	(Ref Interval: 0-50)
GD1a Antibodies, IgG/IgM	100	IV	H	(Ref Interval: 0-50)
GD1b Antibodies, IgG/IgM	100	IV	H	(Ref Interval: 0-50)
GQ1b Antibodies, IgG/IgM	100	IV	H	(Ref Interval: 0-50)

INTERPRETIVE INFORMATION: Ganglioside (Asialo-GM1, GM1, GM2, GD1a, GD1b, and GQ1b) Antibodies, IgG/IgM

29 IV or less: Negative  
30-50 IV: Equivocal  
51-100 IV: Positive  
101 IV or greater: Strong Positive

Ganglioside antibodies are associated with diverse peripheral neuropathies. Elevated antibody levels to ganglioside-monosialic acid (GM1), and the neutral glycolipid, asialo GM1 are associated with motor or sensorimotor neuropathies, particularly multifocal motor neuropathy. Anti-GM1 may occur as IgM (polyclonal or monoclonal) or IgG antibodies. These antibodies may also be found in patients with diverse connective tissue diseases as well as normal individuals. GD1a antibodies are associated with different variants of Guillain-Barre syndrome (GBS) particularly acute motor axonal neuropathy while GD1b antibodies are predominantly found in sensory ataxic neuropathy syndrome. Anti-GQ1b antibodies are seen in more than 80 percent of patients with Miller-Fisher syndrome and may be elevated in GBS patients with ophthalmoplegia. The role of isolated anti-GM2 antibodies is unknown. These tests by themselves are not diagnostic and should be used in conjunction with other clinical parameters to confirm disease.

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### Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot, Serum

ARUP test code 3002917

Neuronal Nuclear Ab (Hu) IgG, IB, Serum **Positive** \* (Ref Interval: Negative)

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.

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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

Neuronal Nuclear Ab (Ri) IgG, IB, Serum

**Positive** \* (Ref Interval: **Negative**)

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

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

Neuronal Nuclear Ab (Yo) IgG, IB, Serum

**Positive** \* (Ref Interval: **Negative**)

INTERPRETIVE INFORMATION: Neuronal Nuclear Ab (Yo) IgG, IB, Serum

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

Neuronal Nuclear Ab (TR/DNER) IgG, IB

**Positive** \* (Ref Interval: **Negative**)

INTERPRETIVE INFORMATION: Neuronal Nuclear Ab (TR/DNER) IgG, IB

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

**Neuronal Nuclear Antibody (ANNA) IFA Titer, IgG (Do Not Use - Please Order (2007961) Paraneoplastic Antibodies (PCCA/ANNA) by IFA with Reflex to Titer and Immunoblot)**

ARUP test code 0050892

Neuronal Nuclear Ab (ANNA) IFA Titer IgG

**1:640** \* (Ref Interval: **<1:10**)

INTERPRETIVE INFORMATION: Neuronal Nuclear Ab (ANNA) IFA Titer IgG

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VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
MAG Antibody, IgM Elisa	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM
SGPG Antibody, IgM	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM
Purkinje Cell/Neuronal Nuclear IgG Scrn	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM
Neuronal Nuclear Ab (ANNA) IFA Titer IgG	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 8:26:17 AM	5/4/2022 8:31:00 AM
Asialo-GM1 Antibodies, IgG/IgM	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM
GM1 Antibodies, IgG/IgM	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM
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GD1b Antibodies, IgG/IgM	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 7:47:07 AM	5/4/2022 8:31:00 AM

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Neuronal Nuclear Ab (Hu) IgG, IB, Serum	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 8:26:17 AM	5/4/2022 8:31:00 AM
Neuronal Nuclear Ab (Ri) IgG, IB, Serum	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 8:26:17 AM	5/4/2022 8:31:00 AM
Neuronal Nuclear Ab (Yo) IgG, IB, Serum	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 8:26:17 AM	5/4/2022 8:31:00 AM
Neuronal Nuclear Ab (TR/DNER) IgG, IB	22-124-100617	5/4/2022 7:46:00 AM	5/4/2022 8:26:17 AM	5/4/2022 8:31:00 AM

END OF CHART

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