

Testing for Anti-Gangliosides, IgG and IgM Antibodies

TWO NEW PANELS FOR THE DETECTION OF AUTOANTIBODIES AGAINST GM1, GD1B, AND GQ1B

Clinical Background

- Elevated antibody levels to ganglioside-monosialic acid (GM1) have been associated with motor neuropathy.
- Anti-GM1 may occur as IgM (polyclonal or monoclonal) or IgG antibodies.
- Anti-GM1 antibodies may also be found in patients with diverse connective-tissue diseases, as well as normal or healthy individuals.
- Anti-GD1b is predominantly found in sensory-motor neuropathy and may also be associated with cranial nerve deficit.
- Anti-GQ1b antibodies are seen in >80 percent of patients with Miller-Fisher syndrome and may be elevated in Guillain-Barre syndrome (GBS) patients with ophthalmoplegia. They have also been associated with sensory-motor neuropathies that involve the brainstem or cranial nerve.

Indications for Ordering

- These assays may be clinically useful in the evaluation of patients suspected of having an autoimmune-mediated neuropathy.
- With the elimination of the Asialo GM1 IgM and IgG assays, the new GM1 antibody panel (ARUP test code [0050591](#)) will be more cost-effective and efficient in the evaluation of multifocal motor neuropathy (MMN) and acute motor axonal neuropathy (AMAN).
- The new GM1, GD1b & GQ1b IgG and IgM panel (ARUP test code 2004998) utilizes a more targeted approach for screening anti-ganglioside antibodies. Unlike the Ganglioside (Asialo-GM1, GM1, GM2, GD1a, GD1b, & GQ1b) Antibody, IgG/IgM panel (ARUP test code [0051033](#)), this panel is capable of distinguishing between IgM and IgG antibodies directed against GM1, GD1b, and GQ1b markers.

Interpretation

Positive results in association with clinical findings may help support the diagnosis of specific autoimmune-mediated neuropathy.

Limitations

Test results alone are not diagnostic and should be used in conjunction with other clinical parameters to confirm disease.

Methodology

Enzyme immunoassay (EIA).

Related Tests

- *Campylobacter jejuni* Antibody, IgG ([0098841](#))
- Myelin Associated Glycoprotein (MAG) Antibodies, IgM & Sulfate-3-Glucuronyl Paragloboside (SGPG) Antibodies, IgM ([2004412](#))
- Ganglioside (Asialo-GM1, GM1, GM2, GD1a, GD1b, & GQ1b) Antibody, IgG/IgM ([0051033](#))
- GM1 Antibody Panel ([0050591](#))
- Motor & Sensory Neuropathy Evaluation with Immunofixation Electrophoresis & Reflex to ANNA Titer & ANNA Immunoblot ([0051223](#))
- Motor & Sensory Neuropathy Evaluation with Reflex to ANNA Titer & ANNA Immunoblot ([0051224](#))
- Acetylcholine Receptor Blocking Antibody ([0099580](#))

References

1. Ariga T, Yu RK. Antiglycolipid antibodies in Guillain-Barre syndrome and related diseases: review of clinical features and antibody specificities. *J Neurosci Res* 2005;80(1):1-17.
2. Bromberg MB. Acute neuropathies. *Front Neurol Neurosci* 2009;26:1-11.
3. Kaida K, et al. Ganglioside complexes as new target antigens in Guillain-Barre syndrome. *Ann Neurol* 2004;56(4):567-71.
4. Nobile-Orazio E, et al. How useful are anti-neural IgM antibodies in the diagnosis of chronic immune-mediated neuropathies? *J Neurol Sci* 2008;266(1-2):156-63.

Test Information

0050591
2004998

Ganglioside (GM1) Antibodies, IgG & IgM

Ganglioside (GM1, GD1b & GQ1b) Antibodies, IgG & IgM

For specific collection, transport, and testing information, refer to the ARUP website at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult® at www.arupconsult.com.

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