**ANTI-MAG & ANTI-SGPG**

Bühlmann ELISA assays for measuring anti-Myelin Associated Glycoproteins and anti-Sulfate-3-Glucuronyl Paragloboside

**MAG**
- MAG assay utilizes highly purified MAG antigen from human brain
- Studies show MAG ELISA to be more sensitive than western blot
- Research suggests anti-MAG IgM autoantibodies are associated with sensory-motor demyelinating peripheral neuropathy

**SGPG**
- SGPG assay utilizes highly purified SGPG from bovine cauda equina
- SGPG has wider distribution with presence in Schwann cells and neuronal membranes, inclusion of SGPG measurement enhances ability for more accurate assessment of peripheral neuropathies

**ELISA METHOD**
- Quantitative
- Sensitive and specific
- Results in 4.5 hours
- Health Canada Licensed
- *Research Use Only* in USA

Measure with Confidence
800-592-5726 • www.alpco.com
**SCHWANN CELL MYELINATION**
Schwann cells in the peripheral nervous system aid in the development and maintenance of myelin sheaths on neurons and those myelin sheaths play an integral role in insulating the axon, allowing for faster and more accurate nerve conduction. Production of MAG antibodies can inhibit myelin creation, impairing neuron signaling and leading to sensory-motor neurological disorders.  

**MAG**
The myelin-associated glycoprotein (MAG) is a transmembrane glycoprotein localized in periaxonal Schwann cells and oligodendroglial membranes of myelin sheaths. IgM antibodies in most neuropathy cases react to the oligosaccharides (HNK-1 epitope) of glycolipids and glycoproteins that are concentrated in the peripheral nerves. This epitope is also shared by a number of other neuropathy target antigens (i.e. gangliosides).

Research has shown detection of anti-MAG IgM autoantibodies, especially at high titers, is associated with sensory-motor demyelinating peripheral neuropathies and IgM gammopathy. The source of antigen for detection of anti-MAG antibodies is pivotal and has significant impact on the sensitivity of the assay. Bühlmann’s anti-MAG ELISA utilizes purified antigen from human brain making it the most sensitive and specific assay on the market.

**SGPG**
Antibodies recognizing MAG also react with a carbohydrate determinant that is present on Sulfate-3-glucuronol paragloboside (SGPG). While MAG is restricted to the periaxonal Schwann cell membranes, SGPG has a wider distribution with presence in both Schwann cell and neuronal membranes including myelin, axolemma, and neural endothelial cells.

**MAG & SGPG**

**Assay Method**

1. **Precoated Microtiter Plate**
   - wash 4x

2. **100 µL Sample, Standard or Control** (diluted 1:1000)
   - incubate 2 hrs at 2-8°C
   - wash 4x

3. **Add 100 µL of Enzyme Label**
   - incubate 2 hrs at 2-8°C
   - wash 4x

4. **Add 100 µL TMB Substrate**
   - incubate 30 min at RT (18-28°C) on a plate rotator

5. **Add 100 µL Stop Solution**

6. **Read at 450 nm**

**Time to Result:** 4.5 Hours

**REFERENCES & PUBLICATIONS**