**PRODUCT INFORMATION**

**Ganglioside G\(_{M1}\) Polyclonal Antibody**

*Item No. 28640*

### Overview and Properties

**Contents:** This vial contains 100 µl polyclonal antibody to G\(_{M1}\).

**Synonyms:** G\(_{M1}\), Monosialoganglioside G\(_{M1}\)

**Immunogen:** Purified ganglioside G\(_{M1}\) and complete Freund's adjuvant

**Form:** Liquid

**Storage:** -20°C (as supplied)

**Stability:** ≥2 years

**Host:** Rabbit

**Isotype:** IgG/IgM

**Applications:** ELISA and TLC immunoblotting; The optimal working concentration/dilution should be determined empirically.

### Description

Ganglioside G\(_{M1}\) is a monosialylated ganglioside and the prototypic ganglioside for those containing one sialic acid residue.\(^1,2\) It is found in a large variety of cells, including immune cells and neurons, and is enriched in lipid rafts in the cell membrane.\(^3\) It associates with growth factor receptors, including TrkA, TrkB, and the GDNF receptor complex containing Ret and GFRα, and is required for TrkA expression on the cell surface. Ganglioside G\(_{M1}\) interacts with other proteins to increase calcium influx, affecting various calcium-dependent processes, including inducing neuronal outgrowth during differentiation. Ganglioside G\(_{M1}\) acts as a receptor for cholera toxin, which binds to its oligosaccharide group, facilitating toxin cell entry into epithelial cells of the jejunum.\(^4,5\) Similarly, it is bound by the heat-labile enterotoxin from *E. coli* in the pathogenesis of traveler's diarrhea.\(^6\) Ganglioside G\(_{M1}\) sensitizes inactivated T cells to TNF-α-induced apoptosis and induces apoptosis of activated T cells even in the absence of TNF-α.\(^7\) Ganglioside G\(_{M1}\) is found at higher levels on T cells isolated from patients with renal cell carcinoma (RCC) compared with T cells from patients without cancer. Levels of ganglioside G\(_{M1}\) are decreased in the substantia nigra pars compacta in postmortem brain from patients with Parkinson's disease.\(^3\) Ganglioside G\(_{M1}\) gangliosidosis, characterized by a deficiency in G\(_{M1}\)-β-galactosidase, the enzyme that degrades ganglioside G\(_{M1}\), leads to accumulation of the gangliosides G\(_{M1}\) and G\(_{A1}\) in neurons and can be fatal in infants.\(^1\) [Matreya, LLC. Catalog No. 1954]

### References