

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

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7. Das, T., Sa, G., Hilston, C., *et al.* GM1 and tumor necrosis factor-α, overexpressed in renal cell carcinoma, synergize to induce T-cell apoptosis. *Cancer Res.* **68(6)**, 2014-2023 (2008).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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