

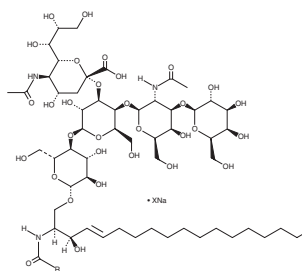
PRODUCT INFORMATION



Ganglioside G_{M1} (porcine brain) (sodium salt)

Item No. 19579

Synonyms:	G _{M1} , Monosialoganglioside G _{M1}
MF:	C ₇₃ H ₁₃₁ N ₃ O ₃₁ • XNa (for stearoyl)
FW:	1,546.8
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ganglioside G_{M1} (porcine brain) (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the ganglioside G_{M1} (porcine brain) (sodium salt) in the solvent of choice, which should be purged with an inert gas. Ganglioside G_{M1} (porcine brain) (sodium salt) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of ganglioside G_{M1} (porcine brain) (sodium salt) in these solvents is approximately 12.5 and 5 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ganglioside G_{M1} (porcine brain) (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ganglioside G_{M1} (porcine brain) (sodium salt) in PBS (pH 7.2) is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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 GFR α , 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 This product contains ganglioside G_{M1} molecular species. As this product is derived from a natural source, there may be variations in the sphingoid backbone.

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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References

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