

PRODUCT DATA SHEET

Monosialoganglioside GM₁ (NH₄⁺ salt)

Catalog No: 1061; 1061-50

Common Name: GM₁

Source: natural, bovine

Solubility: chloroform/methanol/DI water,
(2:1:0.1);
forms micellar solution in water

CAS No: 37758-47-7

Molecular Formula: C₇₃H₁₃₁N₃O₃₁ • NH₃

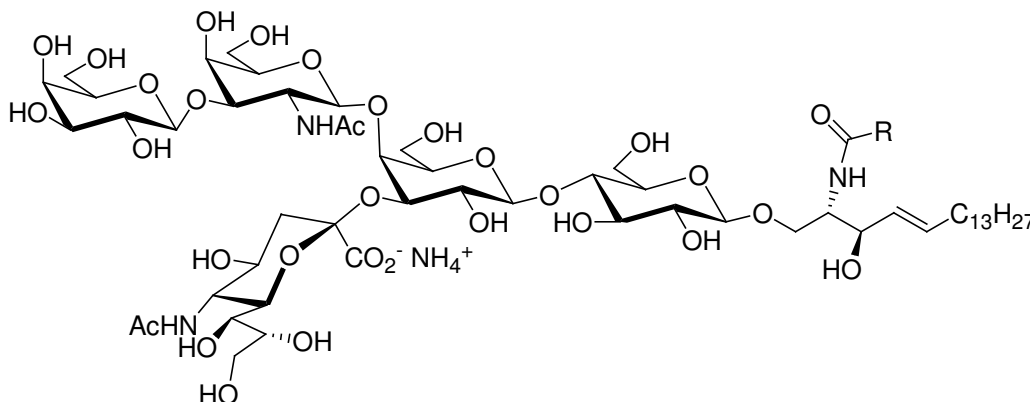
Molecular Weight: 1547 + NH₃ (stearoyl)

Storage: -20°C

Purity: TLC >98%; identity confirmed by MS

TLC System: chloroform/methanol/
2.5N ammonium hydroxide,
(60:40:9 by vol.)

Appearance: solid



Application Notes:

Gangliosides¹ are acidic glycosphingolipids that form lipid rafts in the outer leaflet of the cell plasma membrane, especially in neuronal cells in the central nervous system.² They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.³ The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease. An autoimmune response against gangliosides can lead to Guillain-Barre syndrome. GM₁ stimulates neuronal sprouting and enhances the action of nerve growth factor (NGF) by directly and tightly associating with Trk, the high-affinity tyrosine kinase-type receptor for NGF. It is the specific cell surface receptor for cholera toxin.⁴

Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides*, New York, Plenum, 1980
2. T. Kolter, R. Proia, K. Sandhoff, Combinatorial Ganglioside Biosynthesis. *J. Biol. Chem.*, July Vol. 277, No. 29, pp. 25859-25862, 2002
3. S. Birkle, G. Zeng, L. Gao, R. K. Yu, and J. Aubry. Role of tumor-associated gangliosides in cancer progression. *Biochimie*, 85, 455-463, 2003
4. C. E. Miller, J. Majewski, R. Faller, S. Satija, and T. L. Kuhl. Cholera Toxin Assault on Lipid Monolayers Containing Ganglioside GM₁. *Biophysj.*, June Vol. 86(6), 3700-3708, 2004

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.