

PRODUCT DATA SHEET

lyso-Monosialoganglioside GM₁ (NH₄⁺ salt)

Catalog No: 1518

Common Name: *lyso*-GM₁

Source: semisynthetic, bovine

Solubility: chloroform/methanol/DI water (2:1:0.2)

CAS No: N/A

Molecular Formula: C₅₅H₉₇N₃O₃₀ • NH₃
(d18:1 sphingoid base)

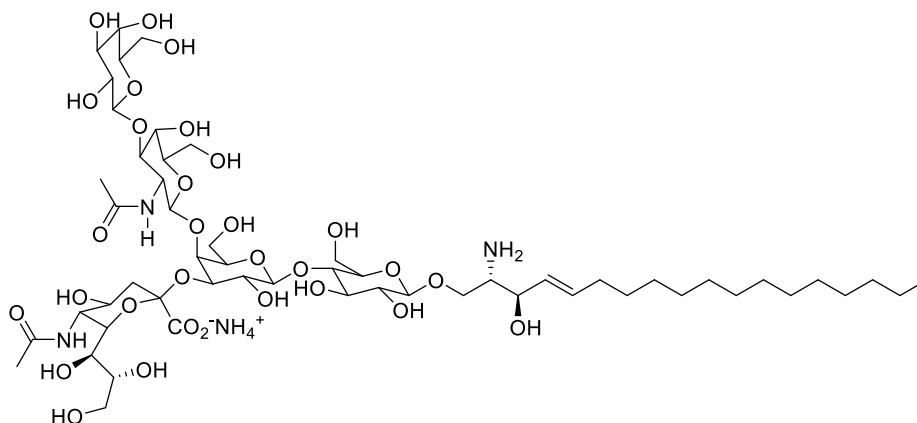
Molecular Weight: 1280+NH₃ (d18:1 sphingoid base)

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:

As this product is derived from a natural source, there may be variations in the sphingoid backbone.

Gangliosides¹ are acidic glycosphingolipids containing sialic acids 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. 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. *Lyso* gangliosides modulate cellular signaling and are being investigated for their immunological potential. They are ideal for obtaining synthetic neoganglioside proteins which can promote an efficient immune response against gangliosides and are therefore important biochemical tools.³ *Lyso* gangliosides also seem to have damage limiting effects on nerve cells. *Lyso* ganglioside GM₁ is ideal for making well-defined GM₁, anti-ganglioside GM₁, and molecular probes.

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.*, Vol. 277, No. 29, pp. 25859-25862, 2002
3. O. Valiente et al. "Preparation of deacetyl-, *lyso*-, and deacetyl-*lyso*-GM₃ by selective alkaline hydrolysis of GM₃ ganglioside" *Journal of Lipid Research*, Vol. 42 pp. 1318-1324, 2001

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