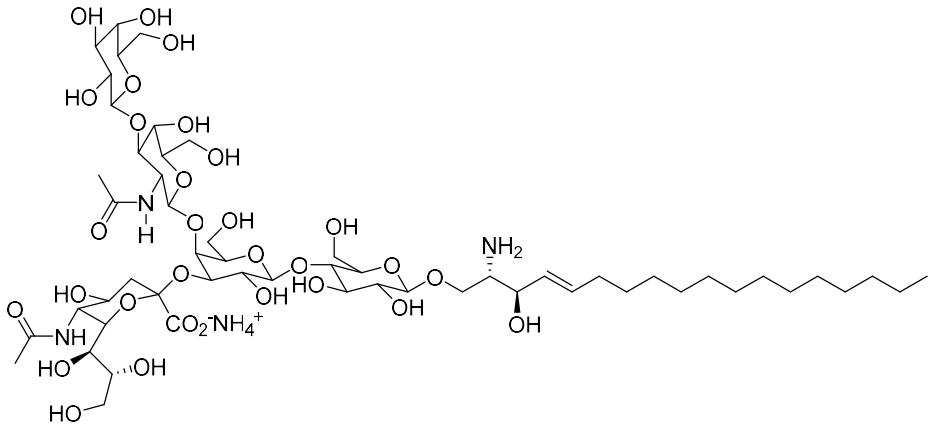
MATREYA LLC
Lipids and Biochemicals
A Cayman Chemical Company

PRODUCT DATA SHEET

lyso-Monosialoganglioside GM_1 (NH_4^+ salt)

Catalog No: 1518
Common Name: *lyso*-GM_1
Source: semisynthetic, bovine
Solubility: chloroform/methanol/DI water (2:1:0.2 by vol.)
CAS No: 171483-40-2
Molecular Formula: $C_{55}H_{97}N_3O_{30} \bullet NH_3$

Molecular Weight: 1280+NH_3
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:

Gangliosides[1] 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. GM_1 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 GM_1 is ideal for making well-defined GM_1, anti-ganglioside GM_1, 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*-GM_3 by selective alkaline hydrolysis of GM_3 ganglioside" *Journal of Lipid Research*, Vol. 42 pp. 1318-1324, *2001*

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