

PRODUCT INFORMATION



Lyso-Monosialoganglioside G_{M1} (ammonium salt)

Item No. 24837

Formal Name: (2S,3R,4E)-2-amino-3-hydroxy-4-octadecenyl O-(N-acetyl- α -neuraminosyl)-(2 \rightarrow 3)-O-[O- β -D-galactopyranosyl-(1 \rightarrow 3)-2-(acetylamino)-2-deoxy- β -D-galactopyranosyl-(1 \rightarrow 4)]-O- β -D-galactopyranosyl-(1 \rightarrow 4)- β -D-glucopyranoside, monoammonium salt

Synonyms: Lyso-ganglioside G_{M1}, Lyso-G_{M1}, lyso-Monosialoganglioside G_{M1}

MF: C₅₅H₉₆N₃O₃₀ • NH₄

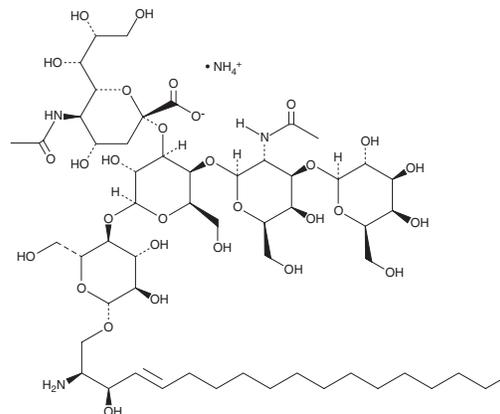
FW: 1,297.4

Purity: \geq 98%

Supplied as: A solid

Storage: -20°C

Stability: \geq 4 years



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

Laboratory Procedures

Lyso-monosialoganglioside G_{M1} (lyso-G_{M1}) (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the lyso-G_{M1} (ammonium salt) in the solvent of choice. Lyso-G_{M1} (ammonium salt) is soluble in a 2:1:0.1 solution of chloroform:methanol:water.

Description

Lyso-G_{M1} is a form of ganglioside G_{M1} (Item No. 19579) that is lacking the fatty acyl group. Lyso-G_{M1} (2.5 μ M) inhibits laminin-1-induced clustering of ganglioside G_{M1} in dorsal root ganglion (DRG) cells and also disrupts β 1 integrin clustering and neurite outgrowth.¹ It does not protect against glutamate-induced neurotoxicity in primary neuronal cultures.² Elevated levels of lyso-G_{M1} have been found in the brain and spinal cord of patients with infantile- and late-infantile-type G_{M1}-gangliosidosis, a neurodegenerative disorder characterized by deficiency of the enzyme β -galactosidase and accumulation of gangliosides.³ As this product is derived from a natural source, there may be variations in the sphingoid backbone.

References

1. Ichikawa, N., Iwabuchi, K., Kurihara, H., *et al.* Binding of laminin-1 to monosialoganglioside GM1 in lipid rafts is crucial for neurite outgrowth. *J. Cell Sci.* **122**(Pt 2), 289-299 (2009).
2. Manev, H., Favaron, M., Vicini, S., *et al.* Glutamate-induced neuronal death in primary cultures of cerebellar granule cells: Protection by synthetic derivatives of endogenous sphingolipids. *J. Pharmacol. Exp. Ther.* **252**(1), 419-427 (1990).
3. Kobayashi, T., Goto, I., Okada, S., *et al.* Accumulation of lysosphingolipids in tissues from patients with GM1 and GM2 gangliosidoses. *J. Neurochem.* **59**(4), 1452-1458 (1992).

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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