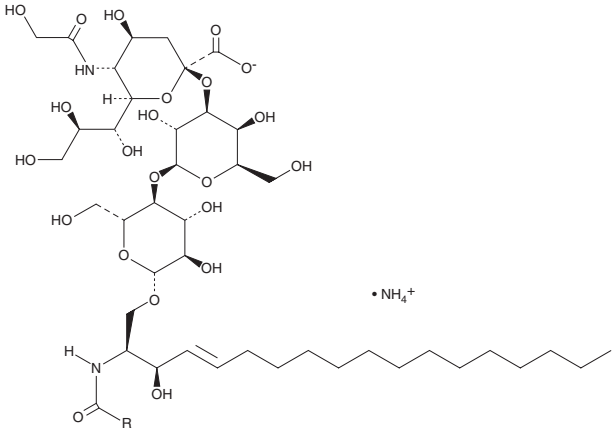
PRODUCT INFORMATION

N-glycolyl-Ganglioside G_{M3} Mixture (ammonium salt)

Item No. 33263



CAS Registry No.: 69345-49-9
Formal Name: 1-O-[O-[N-(hydroxyacetyl)-α-neuraminosyl]-(2→3)-O-β-D-galactopyranosyl-(1→4)-β-D-glucopyranosyl]-ceramide
Synonyms: GM3-Neugc, NeuGc-GM3, NGcGM3, N-glycolyl-G_{M3}, N-glycolyl-Monosialoganglioside G_{M3}, N-Glycolylneuraminyllactosylceramide
MF: $C_{64}H_{117}N_2O_{22} \bullet NH_4$ (for tricosanoyl)
FW: 1,284.7
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Forms micellar solution in water

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

Laboratory Procedures

N-glycolyl-Ganglioside G_{M3} (NeuGc-GM3) mixture (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the NeuGc-GM3 mixture (ammonium salt) in the solvent of choice, which should be purged with an inert gas. NeuGc-GM3 mixture (ammonium salt) is soluble in a 2:1:0.1 solution of chloroform:methanol:DI water. NeuGc-GM3 mixture (ammonium salt) forms a micellar solution in water. We do not recommend storing the aqueous solution for more than one day.

Description

NeuGc-GM3 is a form of ganglioside G_{M3} that contains an N-glycolylated sialic acid (NeuGc). It is not biosynthesized in humans under baseline conditions due to a mutation in CMP-Neu5Ac hydroxylase (CMAH), which converts N-acetyl sialic acid to N-glycolyl sialic acid, but NeuGc can be taken up by human cells *via* the diet and incorporated into glycolipids, such as ganglioside G_{M3}.[1,2] NeuGc-GM3 impairs differentiation and maturation of dendritic cells *in vitro* and reduces CD4 expression in non-activated T cells.[1,3] It increases the number of lung tumor nodules formed in a murine Lewis lung carcinoma model.[4] It is found in a variety of human cancers, including breast and lung cancers, as well as pediatric cancers.[1] Levels of NeuGc-GM3 are negatively correlated with the number of mature dendritic cells in patient-derived non-small cell lung cancer (NSCLC) tumor tissue.[5] Anti-NeuGc-GM3 antibodies, able to destroy tumor cells *in vitro*, have been found in individuals without cancer but not in patients with NSCLC.[1,6] N-glycolyl-Ganglioside G_{M3} mixture contains ganglioside G_{M3} molecular species with primarily C22:0, C23:0, and C24:0 fatty acyl chain lengths. *As this product is derived from a natural source, there may also be variations in the sphingoid backbone.*

References

1. Labrada, M., Dorvignit, D., Hevia, G., *et al. Semin. Oncol.* **45(1-2)**, 41-51 (2018).
2. Tangvoranuntakul, P., Gagneux, P., Diaz, S., *et al. Proc. Natl. Acad. Sci. USA* **100(21)**, 12045-12050 (2003).
3. de León, J., Fernández, A., Clavell, M., *et al. Int. Immunol.* **20(4)**, 591-600 (2008).
4. Segatori, V.I., Vazquez, A.M., Gomez, D.E., *et al. Front. Oncol.* **2**, 160 (2012).
5. van Cruijsen, H., Ruiz, M.G., van der Valk, P., *et al. BMC Cancer* **9**, 180 (2009).
6. Rodríguez-Zhurbenko, N., Martínez, D., Blanco, R., *et al. Eur. J. Immunol.* **43(3)**, 826-837 (2013).

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