

PRODUCT INFORMATION



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

Item No. 33263

CAS Registry No.: 69345-49-9

Formal Name: 1-O-[O-[N-(hydroxyacetyl)- α -neuraminosyl]-
(2 \rightarrow 3)-O- β -D-galactopyranosyl-(1 \rightarrow 4)- β -D-
glucopyranosyl]-ceramide

Synonyms: GM3-Neugc, NeuGc-GM3, NGcGM3,
N-glycolyl-G_{M3}, N-glycolyl-
Monosialoganglioside G_{M3},
N-Glycolylneuraminylactosylceramide

MF: C₆₄H₁₁₇N₂O₂₂ • NH₄ (for tricosanoyl)

FW: 1,284.7

Purity: \geq 98%

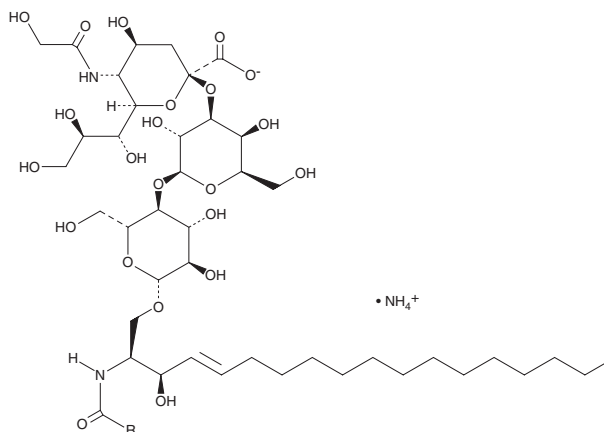
Supplied as: A solid

Storage: -20°C

Stability: \geq 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} This product 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 Crujisen, 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).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM