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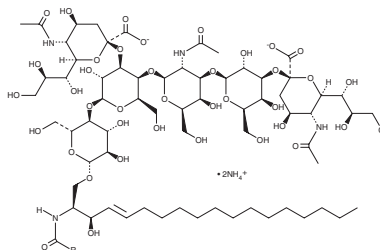
PRODUCT INFORMATION



Ganglioside G_{D1a} Mixture (bovine) (ammonium salt)

Item No. 31591

CAS Registry No.: 12707-58-3
MF: C₈₄H₁₄₆N₄O₃₉ • 2NH₄ (for stearoyl)
FW: 1,872.2
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Ganglioside G_{D1a} mixture (bovine) (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the ganglioside G_{D1a} mixture (bovine) (ammonium salt) in the solvent of choice, which should be purged with an inert gas. Ganglioside G_{D1a} mixture (bovine) (ammonium salt) is soluble in a 2:1:0.1 solution of chloroform:methanol:DI water.

Description

Ganglioside G_{D1a} is a sialic acid-containing glycosphingolipid that has been found in brain, erythrocytes, bone marrow, testis, spleen, and liver, as well as in serum lipoproteins.^{1,2} It is shed into the tumor microenvironment from the surface of tumor cells, where it influences tumor-host cell interactions to promote tumor cell proliferation, invasion, and metastasis.³ It functions as a toll-like receptor 2 (TLR2) co-receptor in isolated human monocytes, colocalizing with TLR2 and enhancing the binding of type IIb *E. coli* enterotoxin (LT-IIb-B₅) to TLR2 when used at a concentration of 20 μM.⁴ Ganglioside G_{D1a} (20 μM) increases VEGF-induced proliferation of human umbilical vein endothelial cells (HUVECs), as well as induces vascularization in a Matrigel™ plug assay in mice when used at a concentration of 20 μM/plug.³ It accumulates in the CNS of patients with galactosialidosis, a lysosomal storage disorder.⁵ Ganglioside G_{D1a} mixture contains ganglioside G_{D1a} molecular species with C14:0, C16:0, C18:0, C20:0, and C22:0 fatty acyl chains.

References

1. Iwamori, M., Shimomura, J., Tsuyuhara, S., *et al.* Gangliosides of various rat tissues: Distribution of ganglio-N-tetraose-containing gangliosides and tissue-characteristic composition of gangliosides. *J. Biochem.* **95**(3), 761-770 (1984).
2. Senn, H.J., Orth, M., Fitzke, E., *et al.* Gangliosides in normal human serum. Concentration, pattern and transport by lipoproteins. *Eur. J. Biochem.* **181**(3), 657-662 (1989).
3. Mukherjee, P., Faber, A.C., Shelton, L.M., *et al.* Thematic review series: Sphingolipids. Ganglioside GM3 suppresses the proangiogenic effects of vascular endothelial growth factor and ganglioside GD1a. *J. Lipid Res.* **49**(5), 929-938 (2008).
4. Liang, S., Wang, M., Tapping, R.I., *et al.* Ganglioside GD1a is an essential coreceptor for Toll-like receptor 2 signaling in response to the B subunit of type IIb enterotoxin. *J. Biol. Chem.* **282**(10), 7532-7542 (2007).
5. Walkley, S.U. Secondary accumulation of gangliosides in lysosomal storage disorders. *Semin. Cell Dev. Biol.* **15**(4), 433-444 (2004).

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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