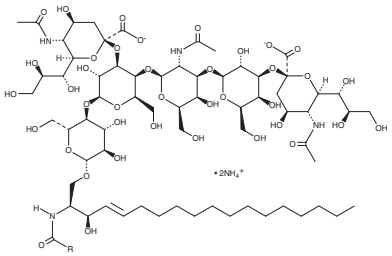
PRODUCT INFORMATION

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

Item No. 31591



CAS Registry No.:	12707-58-3
Synonym:	Disialoganglioside G_{D1a}
MF:	$C_{84}H_{146}N_4O_{39} \bullet 2NH_4$ (for stearoyl)
FW:	1,872.2
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years

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

Laboratory Procedures

Ganglioside G_{D1a} (bovine) (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the ganglioside G_{D1a} (bovine) (ammonium salt) in the solvent of choice, which should be purged with an inert gas. Ganglioside G_{D1a} (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-B_5) 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] This product contains ganglioside G_{D1a} molecular species with primarily C18:0 fatty acyl chain lengths. *As this product is derived from a natural source, there may be variations in the sphingoid backbone.*

References

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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).

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