

PRODUCT DATA SHEET

Tetrasialoganglioside GQ_{1b}, (NH₄⁺ salt), bovine

Catalog No: 1516; 1516-001

Common Name: GQ_{1b}

Source: natural, bovine

Solubility: chloroform/methanol/DI water, (2:1:0.1);
forms micellar solution in water

CAS No: 68652-37-9

Molecular Formula: C₁₀₆H₁₈₂N₆O₅₅ • 4NH₃
(stearoyl; d18:1 sphingoid base)

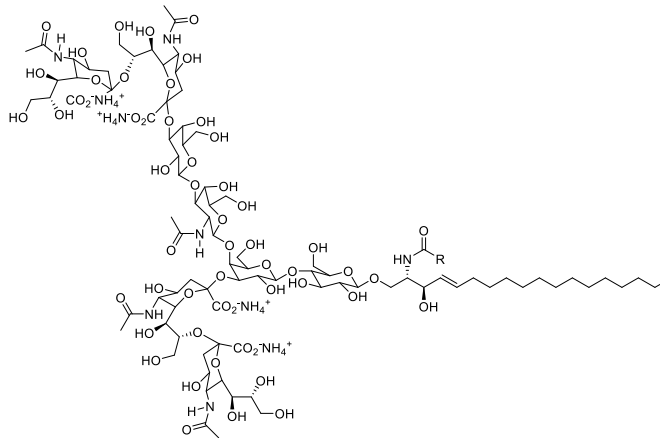
Molecular Weight: 2421 + 4NH₃
(stearoyl; d18:1 sphingoid base)

Storage: -20°C

Purity: TLC > 98%; identity confirmed by MS

TLC System: chloroform/methanol/2.5N ammonium
hydroxide, (60:40:12 by Vol.)

Appearance: solid



Application Notes:

As this product is derived from a natural source, there may be variations in the sphingoid backbone.

Gangliosides¹ are acidic glycosphingolipids that form lipid rafts in the outer leaflet of the cell plasma membrane, especially in neuronal cells in the central nervous system.² They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.³ The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease while an autoimmune response against gangliosides can lead to Guillain-Barré syndrome. Miller-Fisher syndrome, a variant of Guillain-Barré syndrome, is an autoimmune disease characterized by the presence of anti-GQ_{1b} ganglioside antibodies. Studies of these antibodies reveal large disruptions of Schwann cells. GQ_{1b} has been shown to enhance Ig production of human peripheral blood mononuclear cells and to selectively enhance Th1 cytokine production while suppressing Th2 production. GQ_{1b} has also been shown to enhance PHA-induced IL-2 secretion of peripheral blood T cells while it decreases PHA-induced IL-4 and IL-5 secretion. GQ_{1b} suppresses PHA-induced increases in cAMP levels in T cells and suppresses PHA-stimulated adenylate cyclase activity in T cells.⁴

Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides*, New York, Plenum, 1980
2. T. Kolter, R. Proia, K. Sandhoff, Combinatorial Ganglioside Biosynthesis. *J. Biol. Chem.*, July Vol. 277, No. 29, pp. 25859-25862, 2002
3. S. Birkle, G. Zeng, L. Gao, R. K. Yu, and J. Aubry. Role of tumor-associated gangliosides in cancer progression. *Biochimie*, 85, 455-463, 2003
4. N. Kanda and S. Watanabe "Gangliosides GD1b, GT1b, and GQ1b Enhance IL-2 and IFN-g Production and Suppress IL-4 and IL-5 Production in Phytohemagglutinin-Stimulated Human T Cells" *The Journal of Immunology*, Vol. 166 pp. 72-80, 2001

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.