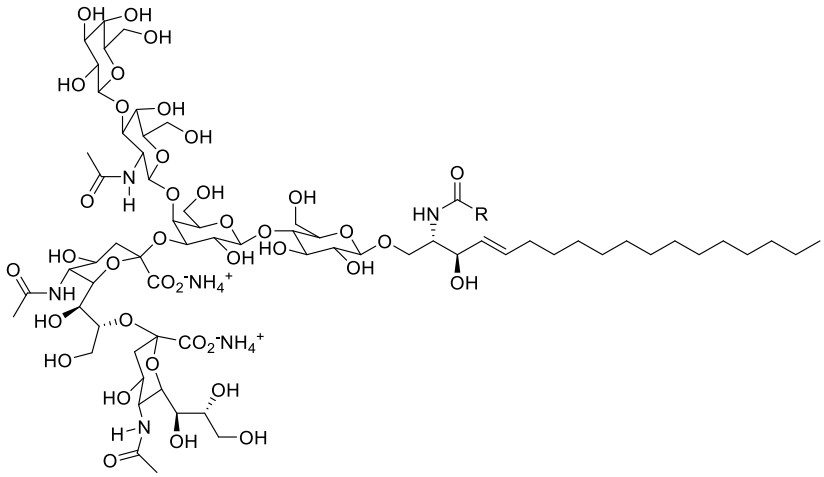
PRODUCT DATA SHEET

Disialoganglioside GD_{1b} (NH_4^+ salt), porcine

Catalog No: 1547
Common Name: GD_{1b}
Source: natural, porcine
Solubility: chloroform/methanol/DI water (2:1:0.1); forms micellar solution in water
CAS No: 19553-76-5
Molecular Formula: $C_{84}H_{148}N_4O_{39} \bullet 2NH_3$ (stearoyl; d18:1 sphingoid base)
Molecular Weight: 1838+ $2NH_3$ (stearoyl; d18:1 sphingoid base)
Storage: -20°C
Purity: TLC > 98%; identity confirmed by MS
TLC System: chloroform/methanol/2.5N ammonium hydroxide, (60:40:9 by vol.)
Appearance: solid



Application Notes:

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

Gangliosides[1] 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. They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.[2] The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease. An autoimmune response against gangliosides can lead to Guillain-Barre syndrome. High levels of GD_{1b} are found in the gliomas and astrocytomas. It can inhibit the efflux of K^+ through K^+ channels which results in the suppression of apoptosis.[3] GD_{1b} acts as a bacterial toxin receptor for tetanus and botulinus as well as for the BK virus.[4]

Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides*, New York, Plenum, *1980*
2. S. Birkle, G. Zeng, L. Gao, R.Yu, and J. Aubry "Role of tumor-associated gangliosides in cancer progression" *Biochimie*, 85, 455–463, *2003*
3. X. Chen et al. "Inhibitory effect of ganglioside GD1b on K^+ current in hippocampal neurons and its involvement in apoptosis suppression" *Journal of Lipid Research*, Vol. 46 pp. 2580-2585, *2005*
4. K. Turton, J. Chaddock and K. Acharya **"**Botulinum and tetanus neurotoxins: structure, function and therapeutic utility" *Trends in Biochemical Sciences*, Vol. 27:11 pp. 552-558, *2002*

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