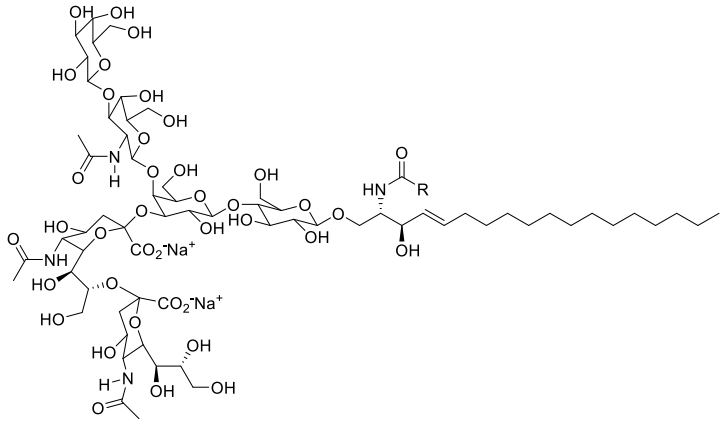
PRODUCT DATA SHEET

Disialoganglioside GD_{1b} (Na^+ salt), bovine

Catalog No: 1557
Common Name: GD_{1b}
Source: natural, bovine
Solubility: chloroform/methanol/DI water, (2:1:0.1); forms micellar solution in water
CAS No: 19553-76-5
Molecular Formula: $C_{84}H_{148}N_4O_{39} \bullet 2Na$

Molecular Weight: 1838+ 2Na (stearoyl)
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:

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*

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.

2178 High Tech Road, State College, PA 16803
www.matreya.com · Phone (814) 355-1030 · Fax (814) 355-1031

DS1557 Rev. #1
June 3rd, 2021