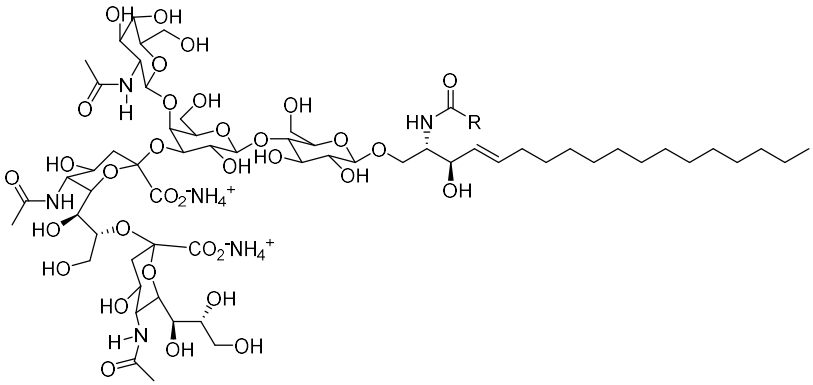
PRODUCT DATA SHEET

Disialoganglioside GD_2 (NH_4^+ salt)

Catalog No: 1527
Common Name: GD_2
Source: semisynthetic, rabbit
Solubility: chloroform/methanol/DI water, (2:1:0.1); forms micellar solution in water
CAS No: 65988-71-8
Molecular Formula: $C_{78}H_{138}N_4O_{34} \bullet 2NH_3$

Molecular Weight: 1676+2NH_3 (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.[2] They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis. The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease and cancer.

Disialoganglioside GD_2 is normally found mostly in the central nervous system and in low amounts in peripheral nerves and skin melanocytes. However in various cancers aberrant glycosilation produces relatively high amounts of GD_2 on tumor cell surfaces and has been shown to enhance tumor proliferation and metastasis. The relatively tumor specific expression of GD_2 makes it a good candidate for immunotherapy using anti-GD_2 antibodies and this approach has been actively pursued for the past several decades.[3,4]

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*., Vol. 277:29 pp. 25859-25862, *2002*
3. M. Ahmed and N. Cheung "Engineering anti-GD_2 monoclonal antibodies for cancer immunotherapy" *FEBBS Lett*. Vol. 588 pp. 288-297, *2014*
4. M. Ahmed, J. Hu, and N. Cheung "Structure based refinement of a humanized monoclonal antibody that targets tumor antigen disialoganglioside GD_2" *Front. Immunol*. Vol. 5(372) pp. 1-6, *2014*

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