

PRODUCT DATA SHEET

Disialoganglioside GD₂ (NH₄⁺ salt)

Catalog No: 1527

Common Name: GD₂

Source: semisynthetic, rabbit

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

CAS No: 65988-71-8

Molecular Formula: C₇₈H₁₃₈N₄O₃₄ • 2NH₃

Molecular Weight: 1676+2NH₃ (stearoyl)

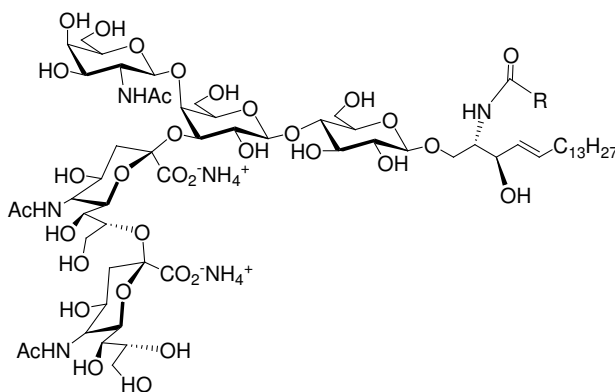
Storage: -20°C

Purity: TLC: >98%; identity confirmed by MS

TLC System: chloroform/methanol/

2.5N ammonium hydroxide,
(60:40:9 by Vol.)

Appearance: solid



Application notes:

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. The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease and cancer.

Disialoganglioside GD₂ is normally found mostly in the central nervous system and in low amounts in peripheral nerves and skin melanocytes. However in various cancers aberrant glycosylation produces relatively high amounts of GD₂ on tumor cell surfaces and has been shown to enhance tumor proliferation and metastasis. The relatively tumor specific expression of GD₂ makes it a good candidate for immunotherapy using anti-GD₂ 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-GD₂ 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 GD₂" *Front. Immunol.* Vol. 5(372) pp. 1-6, 2014

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