

PRODUCT DATA SHEET

Gangliotetraosylceramide

Catalog No: 1064

Common Name: Asialo GM₁; Gg4

Source: semisynthetic, bovine

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

Molecular Formula: C₆₂H₁₁₄N₂O₂₃
(d18:1 sphingoid base)

Molecular Weight: 1256 (d18:1 sphingoid base)

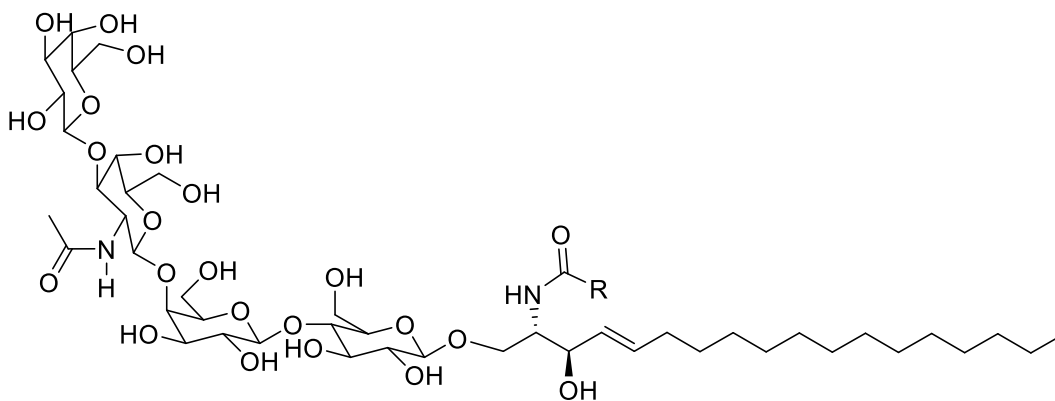
Storage: -20°C

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

TLC System: chloroform/methanol/2.5N ammonium
hydroxide, (60:40:9 by vol.)

Appearance: solid

CAS No: 71012-19-6



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. 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.

Asialo gangliosides, which are neutral glycosphingolipids, have the ganglioside structure but without any sialic acids. Asialo GM₁ is expressed by natural killer cells and is present on very early thymocytes but is lost as the mature murine T cell protein antigens Thy-1, Lyt-1, and Lyt-2 develop on these cells.² Anti-asialo GM₁ has been shown to eliminate natural killer cells.³ Asialo GM₁ is a receptor for a number of bacteria and toxins including *Pseudomonas aeruginosa*.⁴ It is being investigated as a tool for evaluating the repopulating ability of transplantable human hematopoietic stem cells.

Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides*, New York, Plenum, 1980
2. S. Habu, M. Kasai, Y. Nagai, N. Tamaoki, T. TAda, L. A. Herzenberg and K. Okumura "The glycolipid asialo GM1 as a new differentiation antigen of fetal thymocytes" *The Journal of Immunology*, Vol 125(5) pp. 2284-2288, 1980
3. S. Habu, H. Fukui, K. Shimamura, M. Kasai, Y. Nagai, K. Okumura and N. Tamaoki "In vivo effects of anti-asialo GM1. I. Reduction of NK activity and enhancement of transplanted tumor growth in nude mice" *The Journal of Immunology*, Vol 127(1) pp. 34-38, 1981
4. L. Saiman, A. Prince "Pseudomonas aeruginosa pili bind to asialo GM1 which is increased on the surface of cystic fibrosis epithelial cells" *J Clin Invest* Oct, Vol. 92(4) pp. 1875-1880, 1993

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