

PRODUCT DATA SHEET

Monosialoganglioside GM4 (NH₄⁺ salt)

Catalog number: 1535

Synonyms: GM₄

Source: Natural, egg, chicken

Solubility: Chloroform/Methanol (2:1)
Forms micellar solution in water

CAS number: 54827-14-4

Molecular Formula: C₅₇H₁₀₆N₂O₁₇·NH₃

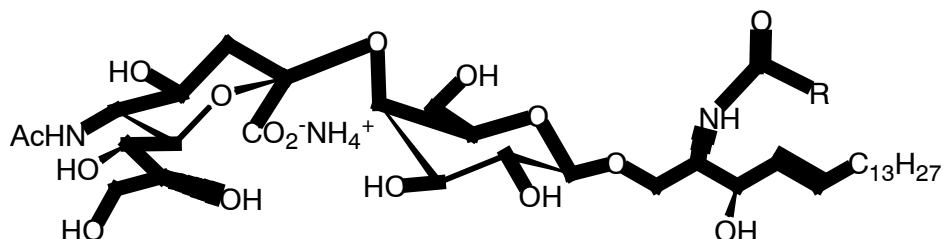
Molecular Weight: 1091+NH₃
(2-hydroxydocosanoyl, NH₄⁺ salt)

Storage: -20°C

Purity: TLC > 98%

TLC System: Chloroform/ Methanol/ 0.02%
Calcium chloride (60:30:5 by Volume.)

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.³ 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. GM₄ is a monosialoganglioside located primarily in the central nervous system and was found to be a major component of myelin gangliosides.⁴ It was also found to be a specific marker for human myelin and oligodendroglial perikarya. However, in chicken cerebellum, GM₄ is associated with astrocytes, and not with myelin. GM₄ has been found to be the major ganglioside in chicken egg yolk, chicken embryonic liver, and frog liver.

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. S. Birkle et al. "Role of tumor-associated gangliosides in cancer progression" *Biochimie*, Vol. 85 pp. 455-463, 2003
4. Li et al. "Association of GM₄ ganglioside with the membrane surrounding lipid droplets in shark liver" *Journal of Lipid Research*, Vol. 43 pp. 1019-1025, 2002

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