

PRODUCT DATA SHEET

Monosialoganglioside GM₄ (NH₄⁺ salt)

Catalog No: 1535

Common Name: GM₄

Source: natural, egg, chicken

Solubility: chloroform/methanol (2:1)

Forms micellar solution in water

CAS No: 66456-69-7

Molecular Formula: C₅₇H₁₀₆N₂O₁₇ • NH₃

Molecular Weight: 1091+NH₃

(2-hydroxydocosanoyl)

Storage: -20°C

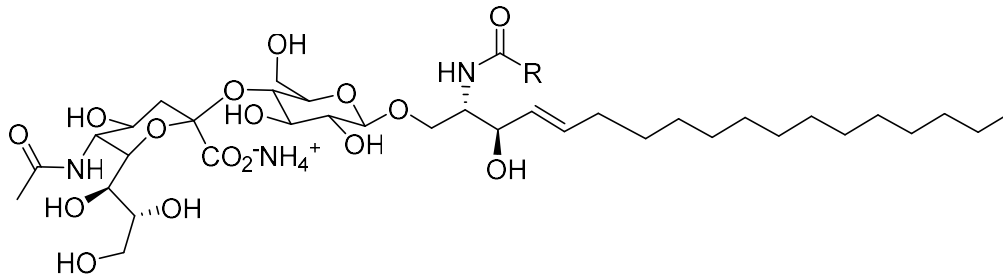
Purity: TLC > 98%; identity confirmed by MS

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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