# **PRODUCT DATA SHEET**



## N-Tetracosenoyl-(cis-15)-D<sub>18</sub>-monosialoganglioside GM<sub>1</sub> (NH<sub>4</sub><sup>+</sup> salt)

Catalog number: 1571 Synonyms: N-Nervonyl-D<sub>18</sub> GM<sub>1</sub>, N-C24:1-D<sub>18</sub> GM<sub>1</sub> Source: semisynthetic, bovine brain Solubility: chloroform/methanol/DI water, 2:1:0.1 CAS number: N/A Molecular Formula: C<sub>79</sub>H<sub>123</sub>D<sub>18</sub>N<sub>3</sub>O<sub>31</sub>•NH<sub>3</sub>

### Molecular Weight: 1647+NH<sub>3</sub> 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<sup>1</sup> 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.<sup>2</sup> They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.<sup>3</sup> The accumulation of gangliosides has been linked to several diseases including Tay-Sachs and Sandhoff disease while an autoimmune response against gangliosides can lead to Guillain-Barre syndrome. GM1 stimulates neuronal sprouting and enhances the action of nerve growth factor (NGF) by directly and tightly associating with Trk, the high-affinity tyrosine kinase-type receptor for NGF. It is the specific cell surface receptor for cholera toxin.<sup>4</sup>

#### **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., 277(29), 25859-25862, 2002
- 3. S. Birkle, G. Zeng, L. Gao, R. K. Yu, and J. Aubry. Role of tumor-associated gangliosides in cancer progression. Biochimie, 85, 455–463, 2003
- 4. C. E. Miller, J. Majewski, R. Faller, S. Satija, and T. L. Kuhl, Cholera Toxin Assault on Lipid Monolayers Containing Ganglioside GM1. Biophys. J., 86(6), 3700–3708, 2004

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