

# PRODUCT DATA SHEET

## Disialoganglioside GD<sub>1b</sub> (NH<sub>4</sub><sup>+</sup> salt), bovine

**Catalog No:** 1501

**Common Name:** GD<sub>1b</sub>

**Source:** natural, bovine

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

**CAS No:** 19553-76-5

**Molecular Formula:** C<sub>84</sub>H<sub>148</sub>N<sub>4</sub>O<sub>39</sub> • 2NH<sub>3</sub>

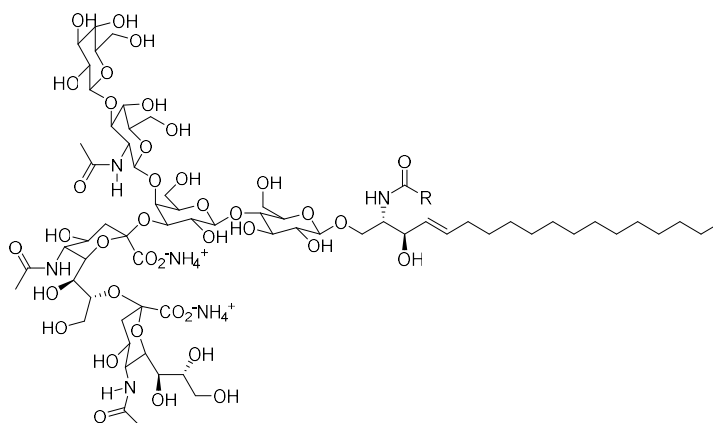
**Molecular Weight:** 1838+ 2NH<sub>3</sub>  
(stearoyl)

**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:

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. They participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.<sup>2</sup> 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. High levels of GD<sub>1b</sub> are found in the gliomas and astrocytomas. It can inhibit the efflux of K<sup>+</sup> through K<sup>+</sup> channels which results in the suppression of apoptosis.<sup>3</sup> GD<sub>1b</sub> acts as a bacterial toxin receptor for tetanus and botulinus as well as for the BK virus.<sup>4</sup>

### Selected References:

1. L. Svennerholm, et al. (eds.), *Structure and Function of Gangliosides*, New York, Plenum, 1980
2. S. Birkle, G. Zeng, L. Gao, R. Yu, and J. Aubry "Role of tumor-associated gangliosides in cancer progression" *Biochimie*, 85, 455-463, 2003
3. X. Chen et al. "Inhibitory effect of ganglioside GD<sub>1b</sub> on K<sup>+</sup> current in hippocampal neurons and its involvement in apoptosis suppression" *Journal of Lipid Research*, Vol. 46 pp. 2580-2585, 2005
4. K. Turton, J. Chaddock and K. Acharya "Botulinum and tetanus neurotoxins: structure, function and therapeutic utility" *Trends in Biochemical Sciences*, Vol. 27:11 pp. 552-558, 2002

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