

PRODUCT DATA SHEET

Lactosylceramide and Sialosyl Derivatives Mixture (qualitative)

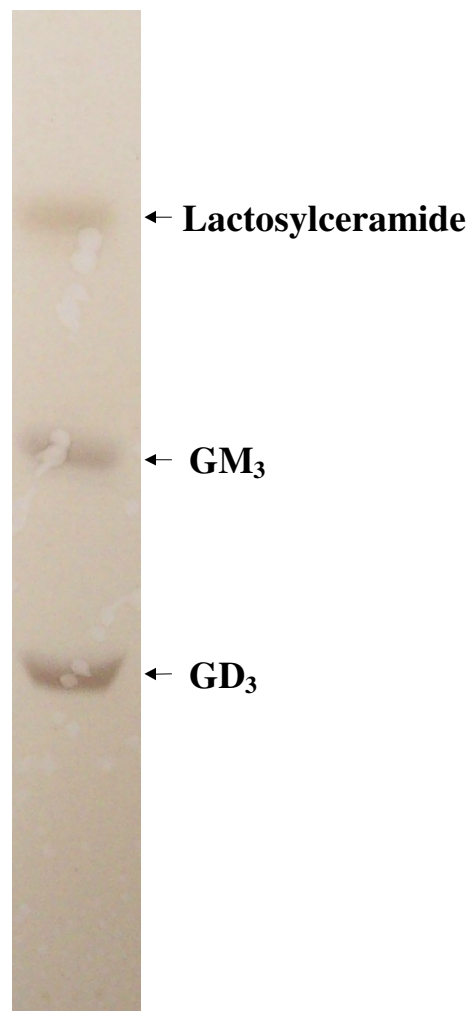
Catalog No:	1510
Components:	LC, GM ₃ , GD ₃
Concentration:	0.5mg/ml
Source:	natural, bovine
Quantity:	1ml
Solvent:	chloroform/methanol/DI water (2:1:0.1)
TLC System:	chloroform/methanol/0.02% calcium chloride (55:45:10 by vol.)
Storage:	-20°C

Application Notes:

This product contains lactosylceramide and the gangliosides GM₃ and GD₃. It is a qualitative mixture prepared from highly pure materials. Lactosylceramide is the precursor of many other glycosphingolipids and also functions as a second messenger and protein receptor, making it a very important organic molecule. Lactosylceramide helps to stabilize the lipid membrane, activate receptor molecules and acts as a receptor for certain bacteria and toxins. Its role as a second messenger has been found to be vital and dysfunctions in its processes can lead to cancer and inflammation since it is critical to neutrophil activity and in activating anti-inflammatory responses.¹ Gangliosides participate in cellular proliferation, differentiation, adhesion, signal transduction, cell-to-cell interactions, tumorigenesis, and metastasis.² Gangliosides act as receptors for various toxins and bacteria, accumulate in different tumors, and aid in many neuronal processes. Because of these functions both lactosylceramide and gangliosides are both very important in therapeutic processes.^{3,4} This is a qualitative mixture and should not be used for quantitative purposes.

Selected References:

1. Ravinder Pannu et al. "A Novel Role of Lactosylceramide in the Regulation of Tumor Necrosis Factor α -mediated Proliferation of Rat Primary Astrocytes: IMPLICATIONS FOR ASTROGLIOSIS FOLLOWING NEUROTRAUMA" *Journal of Biological Chemistry*, Vol. 280 pp. 13742-13751, 2005
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. NanLing Gong "Lactosylceramide recruits PKC α/ϵ and phospholipase A₂ to stimulate PECAM-1 expression in human monocytes and adhesion to endothelial cells" *Proceedings of the National Academy of Sciences*, Vol. 101:17 pp. 6490-6495, 2004



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