

MATREYA NEWSLETTER

FOR GLYCO/SPHINGOLIPID RESEARCH

MAY 2010

Gangliosides

For the past twenty years Matreya has been proud to provide high quality gangliosides for research. Gangliosides are glycosphingolipids containing one or more sialic acid. They are normal constituents of all cell membranes and are most abundant in nerve and brain tissues. Gangliosides play an important role in neuronal functions; they stimulate neuronal growth, enhance axonal sprouting in the peripheral nervous system and retard degenerative processes in the central nervous system. During the last forty years a considerable amount of research has led to the understanding of many ganglioside storage diseases.

Gangliosides such as GM₂, GD₂, and GD₃ are all detected to have elevated levels in glioma associated tumors and in brain tumors. These antigens on tumor cells are the targets of numerous cancer therapies. Research involving monoclonal antibodies directed at carbohydrate antigens such as GD₂ are very promising. Murine and chimeric anti-GD₂ monoclonal antibodies have produced definite therapeutic effects in neuroblastoma cells.

Our gangliosides are isolated from various natural sources including bovine brain, bovine buttermilk, and porcine. The isolation and purification of these gangliosides to a purity of 98+% is a very tedious and time-consuming work, but the team at Matreya uses great care and takes many precautions to insure that the product is of the highest quality.

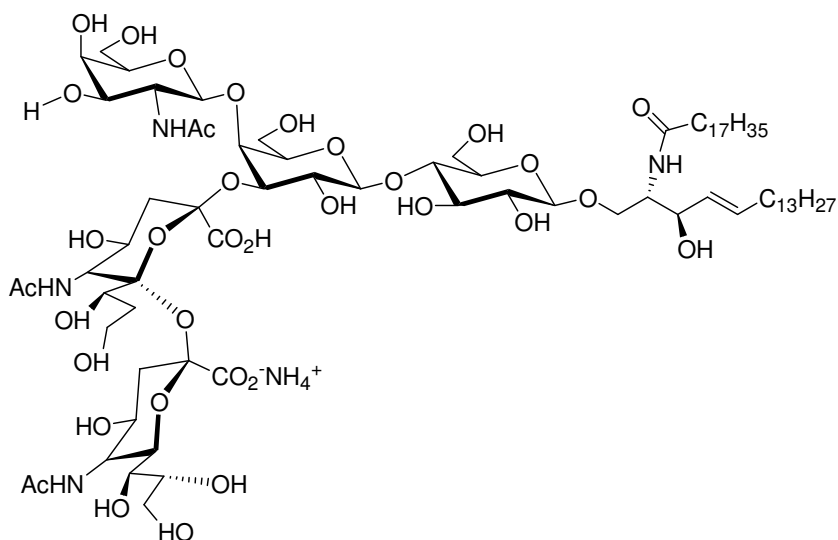
Cat. No.	Name	Size
1064	Asialo GM ₁	1 mg
1512	Asialo GM ₂	100 µg
1061	GM ₁	5 mg
1502	GM ₂	500 µg
1503	GM ₃	500 µg
1535	GM ₄	500 µg
1062	GD _{1a}	5 mg
1501	GD _{1b}	1 mg
1504	GD ₃	1 mg
1063	GT _{1b}	5 mg
1516	TQ _{1b}	100 µg
1526	Fucosyl-GM ₁	500 µg

INSIDE THIS ISSUE

- Gangliosides 1
- Disialoganglioside GD₂ 2
- Fatty Acid Methyl Ester Mixtures 3

For pricing on all products
in this issue please refer
to our website
www.matreya.com
or call 800-342-3595

Disialoganglioside GD2



The detection and quantitation of gangliosides in tumor cells is an active research program in various laboratories and results have demonstrated an elevated level of gangliosides in a number of cancers. Monoclonal antibodies (mABs) of Disialoganglioside GD2 have been studied in the field of neuroblastoma, human glioma and melanoma cell research and have been found to be effective in the inhibition of tumors.

There have been several immunotherapy studies targeted at gangliosides. GD2 has been found to have an increased surface membrane expression on malignant melanoma and cancer cells. Therapies targeting this carbohydrate antigen have led to the production of antibodies against GD2. GD2 can be covalently linked to the keyhole limpet hemocyanin (KLH) to produce a potent adjuvant vaccine by increasing the effectiveness of immunoglobulin (IgM) which then leads to a stronger IgM response. Our GD2 can be used to prepare anti-ganglioside GD2 mABs that are clinically effective against neuroblastoma tumors.

We have been working in the isolation of GD2 and related gangliosides for several years. We are very proud to announce the availability of 98+% pure Disialoganglioside GD2. If you need large quantities of GD2, we will be happy to discuss your needs. Please call Matreya at (800) 342-3595.

Catalog Number	Product Name	Size
1527	Disialoganglioside GD ₂ (semisynthetic, NH ₄ ⁺ salt)	0.5 mg

References:

1. Reisfeld, R.A., Mueller, B.M., Handgretinger, R., Yu, A.L., and Gillies, S.D., *Progress in Brain Research*, **101**, 201, Elsevier Press, New York, 1994.
2. Lode, H.N., Zeng, Y., Fest, S., and Gaedicke, G., *Journal of Clinical Oncology* **25**, (185) 9521, 2007.
3. Cheung, N.V., Cheung, I.Y., LaPiccola, S., Kushner, B.M., and Kramer, K., *Journal of Clinical Oncology*, **21** (6) 1087, 2003.
4. Ragupathi, G., Livingston, P.O., Hood, C., Gathuru, J., Krown, S.E., Chapman, P.B., Wolchok, J.D., Williams, L.J., Oldfield, R.C., and Wen-Jen, Hwu, *Clinical Cancer Research*, **9**, 5214, 2003.

FAME Mixtures (Fatty Acid Methyl Esters)

Why do people consider Matreya for FAME mixtures? The reasons are quite simple:

- **QUALITY** of the ingredients used are 99+%
- **METHOD** of preparation is followed with the utmost caution to preserve the quality of the materials in the mixtures.
- **EXPERIENCE** in the field of fats and oils. Matreya's staff can understand the selection and usefulness of these mixtures in your research and analytical needs.
- **GUIDANCE** Our years of experience in Gas Chromatography will help in answering your technical questions as we can guide you in using our product.

Come to Matreya to meet your needs of Fatty Acids, FAME, or any lipid product.

PUFA Mixtures (Qualitative)

Mix Name Cat. No.	PUFA-1 1093	PUFA-2 1081	PUFA-3 1177
Source:	Natural, fish oil	Natural, porcine	Natural, Menhaden oil
Contains:	C14:0 C16:0 C16:1 ω 7 C18:1 ω 9 C18:1 ω 7 C18:2 ω 6 C18:3 ω 6 C20:1 ω 9 C18:4 ω 3 C22:1 ω 11 C22:1 ω 9 C20:5 ω 3 C22:5 ω 3 C22:6 ω 3	C14:0 C16:0 C16:1 ω 7 C18:0 C18:1 ω 9 C18:1 ω 7 C18:2 ω 6 C18:3 ω 6 C20:1 ω 9 C20:2 ω 6 C20:3 ω 6 C20:4 ω 6 C20:5 ω 3 C22:4 ω 6 C22:5 ω 3 C22:6 ω 3	C14:0 C16:0 C16:1 ω 7 C16:2 ω 4 C16:3 ω 4 C16:4 ω 1 C18:0 C18:1 ω 9 C18:1 ω 7 C18:2 ω 6 C18:2 ω 4 C18:3 ω 4 C18:3 ω 3 C18:4 ω 3 C20:1 ω 9 C20:4 ω 6 C20:4 ω 3 C20:5 ω 3 C21:5 ω 3 C22:5 ω 3 C22:6 ω 3

Volatile acid Mix (qualitative) Cat. No. 1075

Short-chain alkanic acids. Ideal for fermentation studies. formic acid, acetic acid, propionic acid, isobutyric acid, n-butyric acid, isovaleric acid, n-valeric acid, isocaproic acid, n-caproic acid, and heptanoic acid

Bacterial acid methyl esters CP Mix Cat. No. 1114

A qualitative mixture containing equal amounts of the compounds listed: C11:0, 2-OH C10:0, C12:0, C13:0, 2-OH C12:0, 3-OH C12:0, C14:0, iso-C15:0, anteiso-C15:0, C15:0, 2-OH C14:0, 3-OH C14:0, iso-C16:0, C16:1⁹, C16:0, iso-C17:0, C17:0 $\Delta^{9,10}$, C17:0, 2-OH C16:0, C18:2^{9,12}, C18:1 (cis-9), C18:1 (trans-9), C18:0, C19:0 $\Delta^{9,10}$, C19:0, C20:0

Food and Industry Mixtures

Each methyl ester mixture is carefully prepared by weight and the composition verified by gas chromatography. Each component listed in order of their elution.

KEL-FIM-FAME-5 Mix Cat. No. 4210

Contains the methyl esters of the following fatty acids (mg/ml in [brackets]): C8:0 [0.3], C10:0 [0.5], C12:0 [1.0], C13:0 [0.5], C14:0 [0.5], C14:1 [0.3], C15:0 [0.3], C16:0 [2.0], C16:1 [1.0], C17:0 [0.5], C18:0 [1.0], C18:1tr [0.4], C18:1c [3.0], C18:2 [2.0], C20:0 [0.3], C18:3 [1.0], C20:1 [0.3], C22:0 [0.3], C22:1 [0.3]

FIM-FAME-7 Mix Cat. No. 2010

Contains the methyl esters of these fatty acids (weight percent in [brackets]):

C4:0 [4.0], C6:0 [4.0], C8:0 [4.0], C10:0 [4.0], C11:0 [2.0], C12:0 [4.0], C13:0 [2.0], C14:0 [4.0], C14:1(cis-9) [2.0], C15:0 [2.0], C15:1(cis-10) [2.0], C16:0 [6.0], C16:1(cis-9) [2.0], C17:0 [2.0], C17:1(cis-10) [2.0], C18:0 [4.0], C18:1 (trans-9) [2.0], C18:1(cis-9) [4.0], C18:2(trans-9,trans-12) [2.0], C18:2(cis-9,cis-12) [2.0], C18:3(all-cis-6,9,12) [2.0], C20:0 [4.0], C20:1(cis-11) [2.0], C18:3(all-cis-9,12,15) [2.0], C21:0 [2.0], C20:2(cis-11,cis-14) [2.0], C20:3(all-cis-8,11,14) [2.0], C22:0 [4.0], C22:1(cis-13) [2.0], C20:3(all-cis-11,14,17) [2.0], C20:4(all-cis-5,8,11,14) [2.0], C23:0 [2.0], C22:2(cis-13,cis-16) [2.0], C20:5 (all-cis-5,8,11,14,17) [2.0], C24:0 [4.0], C24:1(cis-15) [2.0], C22:6 (all-cis-4,7,10,13,16,19) [2.0]

Custom Synthesis (milligram to multigram)

Matreya's staff has several years of experience in the field of lipid chemistry. Our technology of extraction, isolation, and purification of natural products is unique and we produce high quality lipid preparations. If your need exceeds beyond the catalog size units, please contact us. We can quote from milligram to multigram sizes on our products.

Also, our staff combines the experience of synthetic chemistry and expertise in natural product chemistry and will come up with quick answers to your problems in research. Please call our customer service for quotations.

Depending on complexity of the molecule, delivery time for custom preparations is usually 4 to 12 weeks after receipt of order, usually less than 6 weeks.

Visit us on the web at
www.matreya.com

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MATREYA LLC

