MATREYA

Lipids, Biochemicals,
and Standards for
Life Science Research

2011 - 2012

About Matreya LLC

- Matreya strives to develop, manufacture and deliver products of the highest value to our customers.
- Quality will always be the best achievable by state-of-the-art techniques, typically greater than 98%
- We strive for rapid delivery. 95+% of our products are shipped within 24 hours of receipt of an order.
- Within the area of sphingolipids and glycolipids, we have earned a reputation as the preferred problem solver and technology leader.
- When you demand quality and consistency, you may rely on Matreya lipids.

Matreya Products for Biochemistry Research.

We offer one of the widest selection of ceramides for intracellular signaling research available. We stock antibodies to glycosphingolipids as well as inhibitors of enzymes involved in glycosphingolipid metabolism.

Our products provide the valuable tools for the study of cell membrane and its structure, growth regulators in the cellular metabolism, and intracellular mediators.

We are able to make our products better and better with the latest technology in Chromatography, Mass Spectrometry, and NMR techniques.

We are proud to offer our products as a valuable tool for your life science research needs.

Matreya Products for Microbiology Research.

Matreya stocks many unusual fatty acid standards produced by bacteria that are useful for culture characterization.

Matreya Products for the Food and Agriculture Industries.

Many of Matreya's fatty acid products have been industry standards for many years. The acids and their methyl esters are used as standards in analysis and quality control.

Custom Preparations.

Our experience in chemical synthesis and the extraction and purification of natural products allows us to produce custom preparations with the same high quality and purity as the products listed in the catalog. Depending on the complexity of the molecule, delivery will be 4 to 12 weeks after receipt of an order, usually less than 6 weeks.

If you can't find a product in the catalog, please check the INDEX, where we also try to list common synonyms for our products.

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All chemicals listed in this catalog are for investigational use only. They are not intended for human consumption or to be used in food or food additives. None are for general drug or medicinal use on humans. We believe the information in this catalog, offered in good faith, is accurate.

Limited Warranty: All Matreya Products, except those specifically exempted, are warranted (for 30 days) to be free of defects in materials and workmanship, if properly stored. Any replacements required as a result of such defects will be made without charge provided that such defective products are returned with a written explanation. Please request a Returned Goods Authorization before returning products under this warranty.

Technical Service

Our technical service department may be contacted by telephone at 800.342.3595, or by e-mail to techservice@matreya.com.

Natural Products

Some of our glycolipids are extracted from natural sources. These products have a normal heterogeneity in their lipid components, particularly in the fatty acids. Variations include carbon chain length as well as the presence or absence of 2-hydroxy fatty acids. Products based on sphingosine may contain longer chain sphingoid bases as well as chains with multiple double bonds. This heterogeneity may result in additional spots showing on TLC plates or multiple peaks in LC analyses. We have listed the typical fatty acid compositions of our natural products in the appendix.

Storage

Catalog items in unopened containers are stable for at least one year when stored under the conditions indicated in the catalog listing. Items containing unsaturated fatty acids are subject to oxidation and should be stored in solution in organic solvents or under argon. Glycolipids and phospholipids should not be stored in aqueous solutions due to potential hydrolysis.

Sphingolipid Structures and Pathways

In a clear and straightforward manner, this wall chart indicates the structures and relationships between most commonly discussed sphingolipids. A one-page thumbnail version of the chart is shown on page 98. Full size copies (approximately 35 x 26 inches) are available on request to customer service.

Package Weight

Unless otherwise specified, the package will contain at least the indicated amount and usually slightly more. The user is cautioned to always measure the required amount from the container.

Matreya's Mission

Matreya is committed to manufacturing high purity lipids to be used as research standards in the biotechnology and pharmaceutical areas. These lipids will be offered world-wide at a fair market price, and at a profit sufficient to assure company growth, for the benefit of its customers, employees, share holders, and community. Matreya will also be committed to fast delivery, excellent technical backup, new product development, safety, and environmentally friendly.

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NOTES

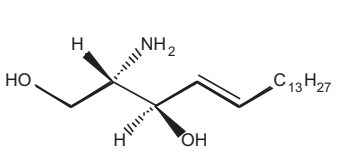
Sphingoid Bases, Sphingolipids and Glycosphingolipids

Sphingoid bases such as sphingosine are the characteristic structural unit of the sphingolipids . The bases are long chain aliphatic amines, containing two or three hydroxyl groups, and typically a *trans*-double bond at C4. In animal tissues most abundant base is sphingosine with a C18 aliphatic chain containing a double bond in position 4 . The saturated analogue is dihydrosphingosine or sphinganine. In plants the common long chain base is the 4 hydroxy saturated base phytosphingosine.

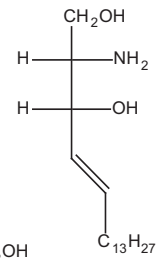
Sphingolipids are widely distributed in animal tissues, particularly cell membranes. Sphingoid bases linked to fatty acids via an amide bond at C2 are ceramides and are present in trace amounts in most tissues. Glycosphingolipids (ceramides having various mono- and oligosaccharides on the OH group at C1) are neutral glycosphingolipids (i.e., cerebrosides and globosides). Those with sialic acid derivatized sugars are acidic glycolipids (i.e., gangliosides). They are amphiphilic and can be solubilized in buffers via sonication and micelle formation.

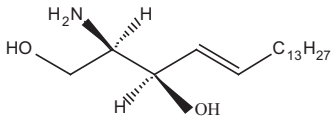
Gangliosides are present in substantial amounts in nerve cell membranes, and together with globosides are found in the membranes of white and red blood cells. These plus the glycosphingolipids of the lacto- and neolacto-series are involved in cell recognition (e.g. blood group determinants). Glycolipid expression on the surface of cells determines their antigenicity as well as their status, i.e. differentiated vs. undifferentiated (embryonic), normal vs. malignant, etc. (51). The ganglioside GM1 stimulates nerve growth (189,190) and has been reported to have a curative effect on experimental Parkinsonism (191). For an overview see (192). Gangliosides are also being investigated as potential anti-tumor vaccines (194). Glycosphingolipids are also essential for the correct functioning of cell surface receptors (193). Matreya is your best source for many sphingolipids. Most of Matreya's sphingosines and ceramides are fully synthetic and as such 98%+ pure. Others, particularly the glycosphingolipids are highly purified natural products (98%+), and can be used either as standards or biochemical reagents without further purification.

Through total synthesis, all four isomers of sphingosine are available as well as a number of sphingosines with other than 18 carbons and a number of ceramides (for details in using ceramides in cell culture see Hauser et al. [9]). Fluorescent labeled ceramides, glycosphingolipids and sphingomyelins are also available for study. D. N. Brindley and his group have been exploring the interaction of ceramides,sphingosine and sphingosine 1-phosphate in regulating DNA synthesis and phospholipase D activity (195). **See Literature References on page 99.**

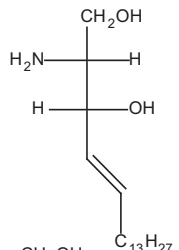


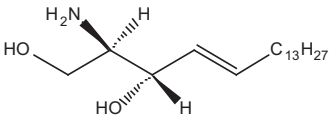
D-erythro-sphingosine (natural occurring) (2S,3R)



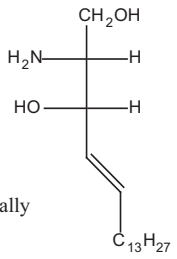


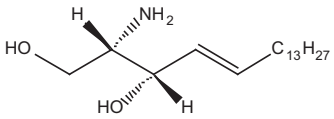
D-threo-sphingosine (2R,3R)



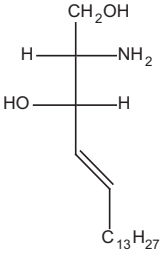


L-erythro-sphingosine (enantiomer of naturally occurring sphingosine) (2R,3S)





L-threo-sphingosine (2S,3S)



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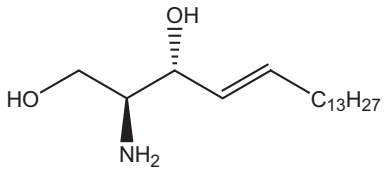
Sphingosines

Synthetic Sphingosines with C18 Sphingoid Base



Catalog number 1802

1802 **D-erythro-Sphingosine** **25 mg**
Sphingosine, C18 chain $C_{18}H_{37}NO_2$ **CAS#:** 123-78-4

Source: synthetic **Mol. Wt.:** 299 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: alcohols, chloroform, DMSO **Storage:** –20°C
References: 1,2,92,93,94,95

Selective inhibitor of phosphokinase C

1806 **L-threo-Sphingosine** **10 mg**
L-threo-Sphingosine, C18 chain $C_{18}H_{37}NO_2$

Source: synthetic **Mol. Wt.:** 299 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C

1826 **L-erythro-Sphingosine** **5 mg**
L-erythro-Sphingosine, C18 chain $C_{18}H_{37}NO_2$ **CAS#:** 6036-75-5

Source: synthetic **Mol. Wt.:** 299 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C

1827 **D-threo-Sphingosine** **5 mg**
D-threo-Sphingosine, C18 chain $C_{18}H_{37}NO_2$ **CAS#:** 6036-85-7

Source: synthetic **Mol. Wt.:** 299 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C

1304 **Sphingosine** **10 mg**
D-erythro-Sphingosine $C_{18}H_{37}NO_2$ **CAS#:** 123-78-4

Source: semisynthetic, bovine **Mol. Wt.:** 299 **Purity:** 98+% by TLC, GC
Appearance: solid **Solubility:** alcohol, chloroform **Storage:** –20°C

Synthetic Sphingosines with Sphingoid Bases other than C18

Varying chain lengths allow the study of translocation effects of sphingosines and ceramides into cells.

1833 **D-erythro-C14-Sphingosine** **5 mg**
Sphingosine with C14 chain $C_{14}H_{29}NO_2$

Source: synthetic **Mol. Wt.:** 243 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C

1835 **D-erythro-C16-Sphingosine** **5 mg**
Sphingosine with C16 chain $C_{16}H_{33}NO_2$

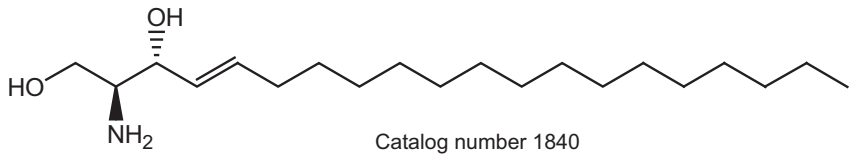
Source: synthetic **Mol. Wt.:** 271 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1838 **D-erythro-C12-Sphingosine** **5 mg**
Sphingosine with C12 chain $C_{12}H_{25}NO_2$ CAS#: 6918-49-6

Source: synthetic **Mol. Wt.:** 215 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1840 **D-erythro-C20-Sphingosine** **5 mg**
Sphingosine with C20 chain $C_{20}H_{41}NO_2$

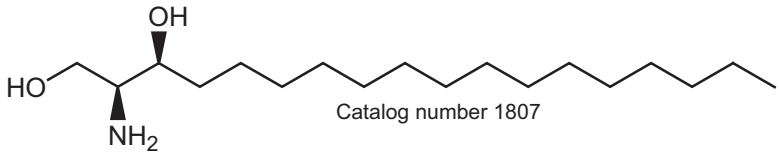
Source: synthetic **Mol. Wt.:** 328 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C



Catalog number 1840

Synthetic Dihydrosphingosines

D,L-*threo*- Dihydrosphingosine has also been found to be a significant inhibitor of sphingosine kinase (6). The D,L-*erythro*-isomer has been used as an inactive control. We offer all four isomers in pure form making detailed studies possible. Safingol, the L-*threo*-isomer is a potent inhibitor of PKC and as such is capable of reversing multi-drug resistance in cancer cells (3). **See Literature References on page 99.**



Catalog number 1807

1807 **L-threo-Dihydrosphingosine (Safingol)** **5 mg**
1807-025 L-threo-Sphinganine, C18 chain $C_{18}H_{39}NO_2$ **CAS#:** 15639-50-6 **25 mg**

Source: synthetic **Mol. Wt.:** 301 **Melting Point (°C):** 103-114 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, DMSO
Storage: –20°C **References:** 3,4

1831 **D-erythro-Dihydrosphingosine** **25 mg**
1831-1 D-erythro-Sphinganine, C18 chain $C_{18}H_{39}NO_2$ **CAS#:** 764-22-7 **1 g**

Source: synthetic **Mol. Wt.:** 301 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C
Inhibitor of PLA_2 and PLD **References:** 5,6,3

1846 **L-erythro-Dihydrosphingosine** **1 mg**
L-erythro-Sphinganine, C18 chain $C_{18}H_{39}NO_2$

Source: synthetic **Mol. Wt.:** 301 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C **References:** 5,6,3

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1851 **D-threo-Dihydrosphingosine** **1 mg**
D-threo-Sphinganine, C18 chain $C_{18}H_{39}NO_2$ **CAS#:** 6036-86-8

Source: synthetic **Mol. Wt.:** 301 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C **References:** 5,6,3

1324 **D,L-erythro-Dihydrosphingosine** **25 mg**
D,L-erythro-Sphinganine, C18 chain $C_{18}H_{39}NO_2$ **CAS#:** 3102-56-5

Source: synthetic **Mol. Wt.:** 301 **Purity:** erythro 77%; threo 23% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethanol, methanol, DMSO
Storage: –20°C **References:** 5,6,3

Inhibitor of sphingosine kinase

1326 **D,L-C16-Dihydrosphingosine (mixed isomers)** **10 mg**
D,L-Sphinganine with C16 chain $C_{16}H_{35}NO_2$

Source: synthetic **Mol. Wt.:** 273 **Purity:** erythro 90%, threo 10% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethanol, methanol, DMSO
Storage: –20°C **References:** 5,6,3

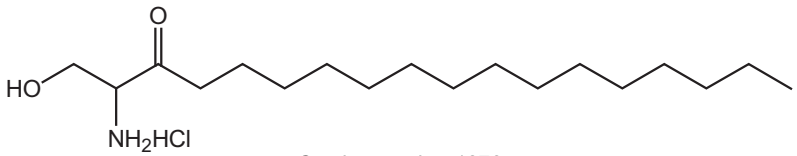
1845 **D-erythro-C20-Dihydrosphingosine** **5 mg**
D-erythro-Sphinganine, C20 chain $C_{20}H_{43}NO_2$ **CAS#:** 24006-62-0

Source: synthetic **Mol. Wt.:** 330 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform/methanol 5:1, warm ethanol **Storage:** –20°C

1839 **D,L-erythro-C20-Dihydrosphingosine** **10 mg**
D,L-erythro-Sphinganine, C20 chain $C_{20}H_{43}NO_2$

Source: synthetic **Mol. Wt.:** 330 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform/methanol 5:1, warm ethanol **Storage:** –20°C

3-Keto-Dihydrosphingosines



Catalog number 1876

1876 **3-keto-Dihydrosphingosine•HCl** **10 mg**
3-keto-Sphinganine hydrochloride $C_{18}H_{37}NO_2$•HCl **CAS#:** 18944-28-0

Source: synthetic **Mol. Wt.:** 336 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1891 **3-keto-C6-Dihydrosphingosine•HCl** **10 mg**
1-Hydroxy-2-amino-3-keto-hexane • HCl $C_6H_{13}NO_2$ •HCl

Source: synthetic **Mol. Wt.:** 168 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol, methanol, DI water **Storage:** –20°C

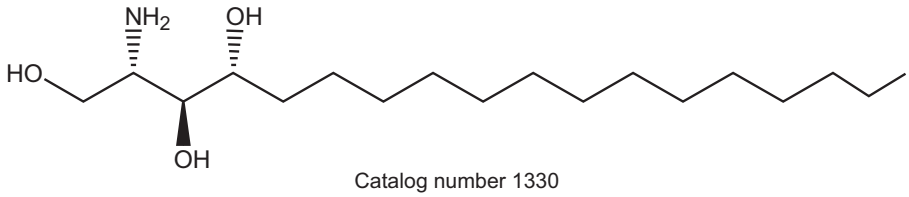
1892 **3-keto-C8-Dihydrosphingosine•HCl** **10 mg**
1-Hydroxy-2-amino-3-keto-octane • HCl $C_8H_{17}NO_2$ •HCl

Source: synthetic **Mol. Wt.:** 196 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DI water **Storage:** –20°C

1893 **3-keto-C12-Dihydrosphingosine•HCl** **10 mg**
1-Hydroxy-2-amino-3-keto-dodecane • HCl $C_{12}H_{25}NO_2$ •HCl

Source: synthetic **Mol. Wt.:** 252 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

Phytosphingosines



Catalog number 1330

1330 **Phytosphingosine** **50 mg**
1330-1 4-Hydroxysphinganine $C_{18}H_{39}NO_3$ **CAS#** 554-62-1 **1 g**

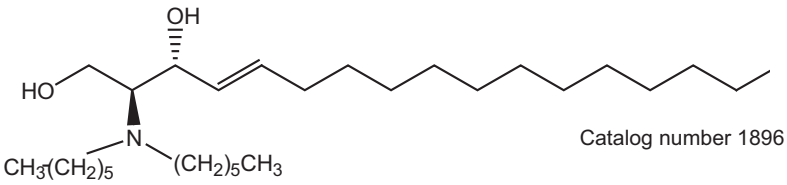
Source: natural, yeast (Pichia ciferri) **Mol. Wt.:** 318 **Purity:** 98+% by TLC, GC
Appearance: solid **Solubility:** ethanol, methanol, chloroform/methanol 2:1 (warm)
Storage: –20°C **Reference:** 7

Other Sphingosine Derivatives and Precursors

1320 **N,N-Dimethyl-D-erythro-sphingosine** **5 mg/ml, 1 ml**
$C_{20}H_{41}NO_2$ **CAS#:** 119567-63-4

Source: synthetic **Mol. Wt.:** 328 **Purity:** 98+% by TLC **Appearance:** liquid
Solvent: isopropanol **Solubility:** chloroform, ethanol, isopropanol, methanol
Storage: –20°C **Reference:** 8

Inhibitor of phosphokinase C



Catalog number 1896

1896 **N,N-Dihexyl-D-erythro-sphingosine** **5 mg/ml, 1 ml**
Sphingosine with tertiary amine group $C_{30}H_{61}NO_2$

Source: synthetic **Mol. Wt.:** 468 **Purity:** 95% by TLC **Appearance:** liquid
Solvent: ethanol **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

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1805 **N-Palmitoyl serinol** **10 mg**
$C_{19}H_{39}NO_3$ **CAS#:** 126127-31-9

Source: synthetic **Mol. Wt.:** 329 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, methanol, ethanol **Storage:** –20°C

Sphingosine precursor

Ceramides

Ceramide is a fatty acid amide of sphingosine. It may be formed by dehydrogenation of dihydroceramide; by hydrolysis of sphingomyelin or glycosphingolipids; or by acylation of free sphingosine. Ceramide functions as a precursor in the synthesis of sphingomyelin (by an exchange reaction with phosphatidylcholine and phosphatidylethanolamine); of glycosphingolipids (by glycosylation with UDP-hexose); and of free sphingosine and fatty acid by hydrolysis. The sphingosine can be phosphorylated by a kinase to form sphingosine-1-phosphate, which may undergo further hydrolysis or cleavage.

Control of sphingolipid metabolism maintains vital balance points in cell physiology. Two of ceramide's metabolites, sphingosine-1-phosphate and glucosylceramide, produce cell proliferation. Sphingosine-1-phosphate is also a highly active regulator of angiogenesis, vascular maturation, cardiac development, immunity, and directed cell movement. Sphingosine, the free base, is a potent inhibitor of protein kinase C and is involved in intracellaular calcium regulation.

Sphingolipid enzymes seem to be particularly active in cancers, so modifying their activities by exogenous action may provide alternatives to chemical therapies. These enzymes are controlled by many known agents, such as 1,25-dihdroxy-vitamin D_3, tumor necrosis factor-α, nerve growth factor, interleukin 1, endothelial growth factor, glutathione, arachidonic acid, dexamethasone, many anticancer drugs, therapeutic radiation, and activators of the FAS receptor.

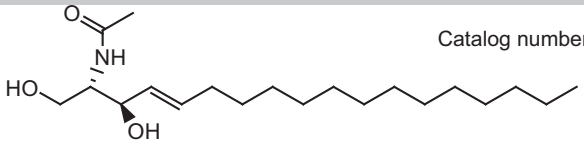
Ceramide exerts numerous biological effects, including induction of cell maturation, cell cycle arrest, terminal cell differentiation, cell senescence, and cell death. Other effects include producing reactive oxygen in mitochondria (followed by apoptosis) and stimulating phosphorylation of certain proteins (especially mitogen activated protein). It also stimulates some protein phosphatases (especially protein phosphatase 2A). Thus ceramide is an important controller of protein activity

It is apparent from these relationships that ceramide exists at the crux of several enzyme reaction cycles and that experiments involving sphingolipid function call for control of all of the cycles and their branch-off points. Matreya is the major supplier of these lipids, which can be used as standards for analysis of tissues (a much needed part of modern research) and identification of major sphingolipids.

Ceramides with short side chains have been shown to enter easily into cells where they are biologically active. Ceramides with longer side chains, however, also enter cells if dissolved in dodecane-isopropanol first. Fluorescent labeled ceramides and sphingomyelin made from fluorescent labeled acids instead of plain fatty acids are also available for the study of the localization and metabolism of sphingolipids in the cell. Matreya now offers all four isomers of C2, C4, C6 and C18 ceramides. The corresponding dihydroceramides are being used as inactive controls

In three major reviews, Radin (196-198) has discussed the biochemistry and chemistry of ceramide and outlined many potential approaches to cancer therapy using ceramides and related compounds as generators of apoptosis.
See Literature References on page 99.

Synthetic Ceramides Derived from C18-Sphingosine



Catalog number 1901

1901 **N-Acetyl-D-erythro-sphingosine** **10 mg**
N-C2:0-D-erythro-Ceramide $C_{20}H_{39}NO_3$ **CAS#:** 3102-57-6

Source: synthetic **Mol. Wt.:** 342 **Purity:** 98+ by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO, (up to 5 mg/ml) **Storage:** –20°C
Reference: 9

1829 **N-Acetyl-L-threo-sphingosine** **1 mg**
N-C2:0-L-threo-Ceramide $C_{20}H_{39}NO_3$

Source: synthetic **Mol. Wt.:** 342 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO, DMF (up to 5 mg/ml)
Storage: –20°C **Reference:** 9

1847 **N-Acetyl-L-erythro-sphingosine** **1 mg**
N-C2:0-L-erythro-Ceramide $C_{20}H_{39}NO_3$

Source: synthetic **Mol. Wt.:** 342 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO, DMF (up to 5 mg/ml)
Storage: –20°C **Reference:** 9

1900 **N-Hexanoyl-D-erythro-sphingosine** **10 mg**
N-C6:0-D-erythro-Ceramide $C_{24}H_{47}NO_3$ **CAS#:** 124753-97-5

Source: synthetic **Mol. Wt.:** 398 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO (up to 5 mg/ml) **Storage:** –20°C
Reference: 9

1828 **N-Hexanoyl-L-threo-sphingosine** **1 mg**
N-C6:0-L-threo-Ceramide $C_{24}H_{47}NO_3$

Source: synthetic **Mol. Wt.:** 398 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up to 5mg/ml) **Storage:** –20°C
Reference: 9

1848 **N-Hexanoyl-L-erythro-sphingosine** **1 mg**
N-C6:0-L-erythro-Ceramide $C_{24}H_{47}NO_3$

Source: synthetic **Mol. Wt.:** 398 **Purity:** 98+% by TLC; GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up to 5mg/ml) **Storage:** –20°C
Reference: 9

1809 **N-Hexanoyl-D-threo-sphingosine** **1 mg**
N-C6:0-D-threo-Ceramide $C_{24}H_{47}NO_3$

Source: synthetic **Mol. Wt.:** 398 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, methanol, DMSO (up to 5 mg/ml) **Storage:** –20°C
References: 9,102,103,104

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1903	**N-Octanoyl-D-erythro-sphingosine** N-C8:0-D-erythro-Ceramide $C_{26}H_{51}NO_3$ **CAS#:** 74713-59-0 **Source:** synthetic **Mol. Wt.:** 426 **Purity:** 98+ by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, DMSO (up to 5 mg/ml) **Storage:** –20°C **Reference:** 9	**10 mg**
1830	**N-Octanoyl-L-threo-sphingosine** N-C8:0-L-threo-Ceramide $C_{26}H_{51}NO_3$ **Source:** synthetic **Mol. Wt.:** 426 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, DMSO, DMF (up to 5 mg/ml) **Storage:** –20°C **Reference:** 9	**1 mg**
1810	**N-Octanoyl-D-threo-sphingosine** N-C8:0-D-threo-Ceramide $C_{26}H_{51}NO_3$ **Source:** synthetic **Mol. Wt.:** 426 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, DMSO, DMF (up to 5mg/ml) **Storage:** –20°C **Reference:** 9	**1 mg**
1333	**N-Decanoyl-D-erythro-sphingosine** N-C10:0-D-erythro-Ceramide $C_{28}H_{55}NO_3$ **Source:** synthetic **Mol. Wt.:** 454 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, DMSO, (up to 5mg/ml) **Storage:** –20°C	**10 mg**
2037	**N-Pentadecanoyl-D-erythro-sphingosine** N-C15:0-D-erythro-Ceramide $C_{33}H_{65}NO_3$ **Source:** synthetic **Mol. Wt.:** 524 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, warm methanol **Storage:** –20°C	**10 mg**
1915	**N-Hexadecanoyl-D-erythro-sphingosine** N-C16:0-D-erythro-Ceramide $C_{34}H_{67}NO_3$ **CAS#:** 24696-26-2 **Source:** synthetic **Mol. Wt.:** 538 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, warm methanol **Storage:** –20°C **Reference:** 10	**10 mg**
2038	**N-Heptadecanoyl-D-erythro-sphingosine** N-C17:0-D-erythro-Ceramide $C_{35}H_{69}NO_3$ **CAS#:** 67492-16-4 **Source:** synthetic **Mol. Wt.:** 552 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, warm methanol **Storage:** –20°C	**10 mg**
1832	**N-Octadecanoyl-D-erythro-sphingosine** N-C18:0-D-erythro-Ceramide $C_{36}H_{71}NO_3$ **CAS#:** 2304-81-6 **Source:** synthetic **Mol. Wt.:** 566 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, hot ethanol, chloroform/methanol 2:1 (up to 5mg/ml) **Storage:** –20°C **Reference:** 9	**10 mg**

2039 **N-Nonadecanoyl-D-erythro-sphingosine** **10 mg**
N-C19:0-D-erythro-Ceramide $C_{37}H_{73}NO_3$

Source: synthetic **Mol. Wt.:** 580 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, warm ethanol, warm methanol **Storage:** –20°C

1843 **N-Octadecanoyl-L-threo-sphingosine** **1 mg**
N-C18:0-L-threo-Ceramide $C_{36}H_{71}NO_3$

Source: synthetic **Mol. Wt.:** 566 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up to 5mg/ml) **Storage:** –20°C
Reference: 9

1850 **N-Octadecanoyl-L-erythro-sphingosine** **1 mg**
N-C18:0-L-erythro-Ceramide $C_{36}H_{71}NO_3$

Source: synthetic **Mol. Wt.:** 566 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up tp 5mg/ml) **Storage:** –20°C
Reference: 9

1855 **N-Octadecanoyl-D-threo-sphingosine** **1 mg**
N-C18:0-D-threo-Ceramide $C_{36}H_{71}NO_3$

Source: synthetic **Mol. Wt.:** 566 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up to 5mg/ml) **Storage:** –20°C

1916 **N-Tetracosanoyl-D-erythro-sphingosine** **5 mg**
N-C24:0-D-erythro-Ceramide $C_{42}H_{83}NO_3$ **CAS#:** 34435-05-7

Source: synthetic **Mol. Wt.:** 650 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform **Storage:** –20°C

1930 **N-Tetracosenoyl-D-erythro-sphingosine** **5 mg**
N-cis 15-C24:1-D-erythro-ceramide; N-Nervonoyl-D-erythro-sphingosine
$C_{42}H_{81}NO_3$ **CAS#:** 54164-50-0

Source: synthetic **Mol. Wt.:** 648 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, warm methanol **Storage:** –20°C

2-Hydroxy Ceramides

2042 **N-(R,S)-alpha-Hydroxydodecanoyl-D-erythro-sphingosine** **5 mg**
N-(R,S)-alpha-Hydroxy-C12:0-D-erythro-ceramide $C_{30}H_{59}NO_4$

Source: synthetic **Mol. Wt.:** 498 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, methanol, ethanol, DMSO **Storage:** –20°C

2044 **N-(R,S)-alpha-Hydroxyoctadecanoyl-D-erythro-sphingosine** **5 mg**
N-(R,S)-alpha-Hydroxy-C18:0-D-erythro-ceramide $C_{36}H_{71}NO_4$

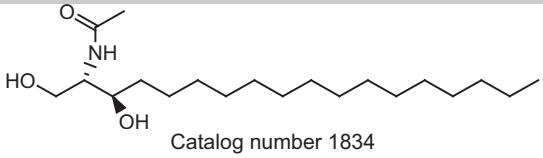
Source: synthetic **Mol. Wt.:** 582 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform/methanol/water, 2:1:0.5 **Storage:** –20°C

Ceramide Made from Sphingosines with Sphingoid Bases Other Than C18

1842 **N-Acetyl-D-erythro-sphingosine (C14 sphingoid base)** **5 mg**
N-C2:0 Ceramide of D-erythro-C14-sphingosine $C_{16}H_{31}NO_3$

Source: synthetic **Mol. Wt.:** 285 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO, DMF (up to 5 mg/ml) **Storage:** –20°C
Reference: 9

Dihydroceramides



Catalog number 1834

1834 **N-Acetyl-D-erythro-dihydrosphingosine** **5 mg**
N-C2:0-D-erythro-Dihydroceramide; N-Acetyl-D-erythro-sphinganine
$C_{20}H_{41}NO_3$

Source: synthetic **Mol. Wt.:** 344 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C **Reference:** 9

1910 **N-Hexanoyl-D-erythro-dihydrosphingosine** **5 mg**
N-C6:0-D-erythro-Dihydroceramide; N-Hexanoyl-D-erythro-sphinganine
$C_{24}H_{49}NO_3$

Source: synthetic **Mol. Wt.:** 400 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DMSO **Storage:** –20°C **Reference:** 9

1854 **N-Octanoyl-D-erythro-dihydrosphingosine** **5 mg**
N-C8:0-D-erythro-Dihydroceramide; N-Octanoyl-D-erythro-sphinganine
$C_{26}H_{53}NO_3$

Source: synthetic **Mol. Wt.:** 428 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, DMSO **Storage:** –20°C **Reference:** 9

2041 **N-Octadecanoyl-D-erythro-dihydrosphingosine** **10 mg**
N-C18:0-D-erythro-Dihydroceramide; N-Octadecanoyl-D-erythro-sphinganine
$C_{36}H_{73}NO_3$

Source: synthetic **Mol. Wt.:** 568 **Purity:** 98% by TLC **Appearance:** solid
Solubility: warm chloroform/methanol, 5:1; hot ethanol, DMSO **Storage:** –20°C

2-Hydroxy Dihydroceramides

2043 **N-(R,S)-alpha-Hydroxydodecanoyl-D-erythro-dihydrosphingosine** **5 mg**
N-(R,S)-alpha-Hydroxy-C12:0-D-erythro-dihydroceramide $C_{30}H_{61}NO_4$

Source: synthetic **Mol. Wt.:** 500 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform/methanol/water, 2:1:0.5 **Storage:** –20°C

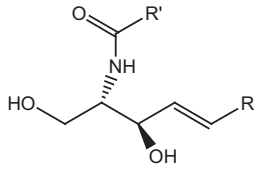
2045 **N-(R,S)-alpha-Hydroxyoctadecanoyl-D-erythro-dihydrosphingosine** **5 mg**
N-(R,S)-alpha-Hydroxy-C18:0-D-erythro-dihydroceramide $C_{36}H_{73}NO_4$

Source: synthetic **Mol. Wt.:** 584 **Purity:** 98+% by TLC, GC **Appearance:** solid
Solubility: chloroform/methanol/water, 2:1:0.5 **Storage:** –20°C

2047 **N-(R,S)-alpha-Hydroxyhexadecanoyl-D-erythro-dihydrosphingosine** **5 mg**
N-(R,S)-alpha-Hydroxy-C16:0-D-erythro-dihydroceramide $C_{34}H_{69}NO_4$

Source: synthetic **Mol. Wt.:** 556 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol/water, 2:1:0.5 **Storage:** –20°C

Ceramides From Natural Sources



General ceramide structure

1056 **Ceramides** **25 mg**
Ceramides with hydroxy and non-hydroxy acyl groups
$C_{42}H_{83}NO_4$ **CAS#:** 104404-17-13

Source: natural, bovine **Mol. Wt.:** 666(2-hydroxy-lignoceroyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C
Reference: 9

1322 **Ceramides** **10 mg**
1322-05 Ceramides with mostly non-hydroxy acyl groups $C_{36}H_{71}NO_3$ **50 mg**

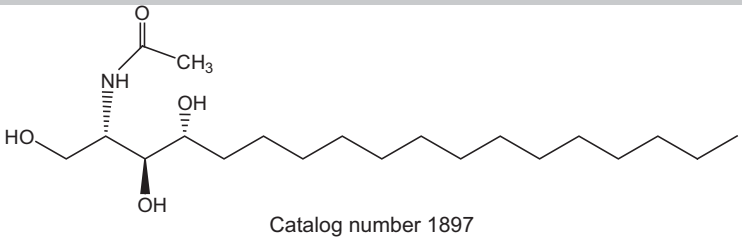
Source: natural, bovine **Mol. Wt.:** 566 (stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, ethanol **Storage:** –20°C
Reference: 9

1323 **Ceramides** **10 mg**
1323-05 Ceramides with mostly hydroxy acyl groups $C_{36}H_{71}NO_4$ **50 mg**

Source: natural, bovine **Mol. Wt.:** 582 (2-hydroxy-stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C
References: 9,102,103,104

See Table III in Appendix for typical fatty acid content of products prepared from natural sources.

Phytoceramides



Catalog number 1897

1897 **N-Acetyl-phytosphingosine** **5 mg**
N-C2:0-Phytoceramide $C_{20}H_{41}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 360 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol, chloroform/methanol 1:1 (warm), warm DMSO **Storage:** –20°C

1895 **N-Hexanoyl-phytosphingosine** **5 mg**
N-C6:0-Phytoceramide $C_{24}H_{49}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 416 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol, chloroform/methanol 1:1 (warm) **Storage:** –20°C

1894 **N-Octanoyl-phytosphingosine** **5 mg**
N-C8:0-Phytoceramide $C_{26}H_{53}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 444 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol, chloroform/methanol 1:1 (warm) **Storage:** –20°C

2035 **N-Hexadecanoyl-phytosphingosine** **5 mg**
N-C16:0-Phytoceramide $C_{34}H_{69}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 556 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

2034 **N-Stearoyl-phytosphingosine** **5 mg**
N-C18:0-Phytoceramide $C_{36}H_{73}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 584 **Purity:** 98+% by TLC-MS **Appearance:** solid **Solubility:** chloroform/methanol 1:1 (warm) **Storage:** –20°C

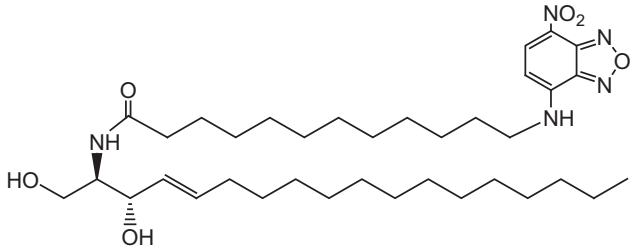
2036 **N-Tetracosanoyl-phytosphingosine** **5 mg**
N-C24:0-Phytoceramide $C_{42}H_{85}NO_4$

Source: semisynthetic, yeast (Pichia ciferri) **Mol. Wt.:** 668 **Purity:** 98+% by TLC-MS **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

Fluorescent Ceramides

1841 **N-Hexanoyl-NBD-D-erythro-sphingosine** **100 µg**
1841-001 N-C6:0-NBD-ceramide; N-C6:0-NBD-D-erythro-sphingosine, fluorescent; N-(NBD-aminocaproyl)-D-erythro-sphingosine $C_{30}H_{49}N_5O_6$ **CAS#:** 86701-10-2 **1 mg**

Source: synthetic **Mol. Wt.:** 575 **Melting Point (°C):** 85.7-87.9 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C **Reference:** 9



Catalog number 1618

Excitation: 460 nm
Emission: 535 nm

1618 **N-Dodecanoyl-NBD-D-erythro-sphingosine** **100 ug**
1618-001 N-C12:0-NBD ceramide; N-C12:0-NBD-D-erythro-sphingosine, fluorescent; N-(NBD-aminolauroyl)-D-erythro-sphingosine $C_{36}H_{61}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 660 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1857 **N-Hexanoyl-NBD-L-threo-sphingosine** **100 µg**
1857-001 N-C6:0-NBD-ceramide; N-C6:0-NBD-L-threo-sphingosine, fluorescent; N-(NBD-aminocaproyl)-L-threo-sphingosine $C_{30}H_{49}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 575 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C **Reference:** 9

1620 **N-Dodecanoyl-NBD-L-threo-sphingosine** **100 µg**
1620-001 N-C12:0-NBD-ceramide; N-C12:0-NBD-L-threo-sphingosine, fluorescent; N-(NBD-aminolauroyl)-L-threo-sphingosine $C_{36}H_{61}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 660 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1624 **N-Hexanoyl-NBD-L-threo-dihydrosphingosine** **100 µg**
1624-001 N-C6:0-NBD-dihydroceramide; N-C6:0-NBD-L-threo-dihydrosphingosine, fluorescent; N-(NBD-aminocaproyl)-L-threo-dihydrosphingosine $C_{30}H_{51}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 578 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1623 **N-Dodecanoyl-NBD-L-threo-dihydrosphingosine** **100 µg**
1623-001 N-C12:0-NBD-dihydroceramide; N-C12:0-NBD-L-threo-dihydrosphingosine, fluorescent; N-(NBD-aminolauroyl)-L-threo-dihydrosphingosine $C_{36}H_{63}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 662 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

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1626 **N-Hexanoyl-NBD-D-erythro-dihydrosphingosine** **100 µg**
1626-001 N-C6:0-NBD-dihydroceramide; N-C6:0-NBD-D-erythro-dihydrosphingosine, fluorescent; N-(NBD-aminocaproyl)-D-erythro-dihydrosphingosine **1 mg**
$C_{30}H_{51}N_5O_6$

Source: synthetic **Mol. Wt.:** 578 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1625 **N-Dodecanoyl-NBD-D-erythro-dihydrosphingosine** **100 µg**
1625-001 N-C12:0-NBD-dihydroceramide; N-C12:0-NBD-D-erythro-dihydrosphingosine, fluorescent; N-(NBD-aminolauroyl)-D-erythro-dihydrosphingosine $C_{36}H_{63}N_5O_6$ **1 mg**

Source: synthetic **Mol. Wt.:** 662 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1628 **N-Hexanoyl-NBD-phytosphingosine** **100 µg**
1628-001 N-C6:0-NBD-phytoceramide; N-C6:0-NBD-phytosphingosine, fluorescent; N-(NBD-aminocaproyl)-phytosphingosine $C_{30}H_{51}N_5O_7$ **1 mg**

Source: semisynthetic, bacteria **Mol. Wt.:** 594 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C

1627 **N-Dodecanoyl-NBD-phytosphingosine** **100 µg**
1627-001 N-C12:0-NBD-phytoceramide; N-C12:0-NBD-phytosphingosine, fluorescent; N-(NBD-aminolauroyl)-phytosphingosine $C_{36}H_{63}N_5O_7$ **1 mg**

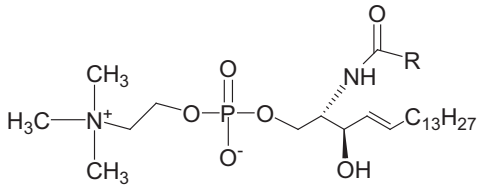
Source: semisynthetic, bacteria **Mol. Wt.:** 678 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol
Storage: –20°C

See Biochemicals and Reagents section (page 87) for additional fluorescent labeled products.

Compounds with fluorescent labels other than NBD are available on custom basis. Contact Technical Service for more information.

Phosphosphingolipids

Sphingomyelins



Catalog number 1051

1051 **Sphingomyelin** **25 mg**
1051-1 SPM; ceramide-1-phosphorylcholine $C_{41}H_{83}N_2O_6P$ **CAS#:** 85187-10-6 **1 g**

Source: natural, bovine spinal cord **Mol. Wt.:** 731 (stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C
References: 119,120,145,146,147

Predominately C18:0 and C24:1 fatty acids

1328	**Sphingomyelin** SPM; Ceramide-1-phosphorylcholine $C_{47}H_{95}N_2O_6P$ **CAS#:** 85187-10-6 **Source:** natural, porcine RBC **Mol. Wt.:** 815 (lignoceroyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol **Storage:** –20°C Predominately C16:0 and C24:0 fatty acids	**25 mg**
1329	**Sphingomyelin** SPM; Ceramide-1-phosphorylcholine $C_{46}H_{93}N_2O_6P$ **CAS#:** 85187-10-6 **Source:** natural, bovine buttermilk **Mol. Wt.:** 801 (tricosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol **Storage:** –20°C Approximately equal amounts of C16:0, C22:0, C23:0, and C24:0 fatty acids	**25 mg**
1332 **1332-1**	**Sphingomyelin** SPM; Ceramide-1-phosphorylcholine $C_{39}H_{79}N_2O_6P$ **Source:** natural, chicken, egg **Mol. Wt.:** 703 (palmitate) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, methanol, warm ethanol **Storage:** –20°C **References:** 119,120,145,177,178	**25 mg** **1 gram**
1907	**N-Acetyl-sphingosylphosphorylcholine** Sphingomyelin with C2:0 fatty acid $C_{25}H_{51}N_2O_6P$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 506 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** ethanol, chloroform/methanol 2:1 **Storage:** –20°C Mixture of D-erythro and L-threo isomers	**5 mg**
1909	**N-Hexanoyl-sphingosylphosphorylcholine** Sphingomyelin with C6:0 fatty acid $C_{29}H_{59}N_2O_6P$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 563 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** ethanol, chloroform/methanol 2:1 **Storage:** –20°C Mixture of D-erythro and L-threo isomers	**5 mg**
1911	**N-Octadecanoyl-sphingosylphosphorylcholine** Sphingomyelin with C18:0 fatty acid $C_{41}H_{83}N_2O_6P$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 731 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C Mixture of D-erythro and L-threo isomers	**5 mg**
1890	**N-Heptadecanoyl-sphingosylphosphorylcholine** Sphingomyelin with C17:0 fatty acid $C_{40}H_{81}N_2O_6P$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 717 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C Mixture of D-erythro and L-threo isomers	**5 mg**

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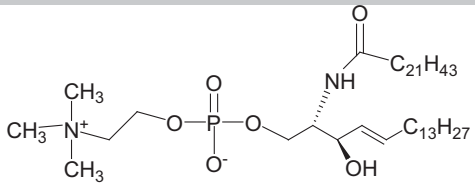
1917 **N-Eicosanoyl-D-erythro-sphingosylphosphorylcholine** **0.5 mg**
Sphingomyelin with C20:0 fatty acid $C_{43}H_{87}N_2O_6P$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 759 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 14:1, ethanol, methanol
Storage: –20°C



Catalog number 1918

1918 **N-Docosanoyl-D-erythro-sphingosylphosphorylcholine** **0.5 mg**
Sphingomyelin with C22:0 fatty acid $C_{45}H_{91}N_2O_6P$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 787 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 14:1, ethanol, methanol
Storage: –20°C

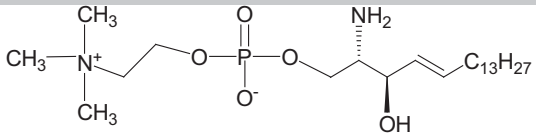
2200 **N-1-^{13}C-Palmitoyl-sphingosylphosphorylcholine** **1mg**
D-erythro-Sphingomyelin with 1-^{13}C-palmitic acid; SPM with ^{13}C labeled fatty acid $^{12}C_{38}{}^{13}CH_{79}N_2O_6P$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 703 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1327 **N-Acyl-sphingosylphosphorylethanolamine** **5 mg**
Ceramide phosphorylethanolamine $C_{44}H_{89}N_2O_6P$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 773 (based on tricosanoyl)
Purity: 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1
Storage: –20°C

Sphingosylphosphorylcholines (SPC)



Catalog number 1318

1318 **D-erythro-Sphingosylphosphorylcholine** **5 mg**
D-erythro-SPC $C_{23}H_{49}N_2O_5P$

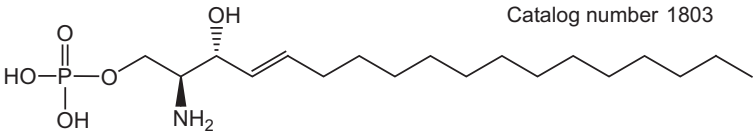
Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 464 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1319 **L-threo-Sphingosylphosphorylcholine** **5 mg**
L-threo-SPC $C_{23}H_{49}N_2O_5P$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 464 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1321 **1321-05**	**Sphingosylphosphorylcholine** lyso-Sphingomyelin; SPC (mixture of D-erythro and L-threo isomers) $C_{23}H_{49}N_2O_5P$ **CAS#:** 82970-80-7 **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 466 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C	**10 mg** **50 mg**
1913	**lyso-Dihydrosphingomyelin** Dihydrosphingosylphosphorylcholine (mixture of D-erythro and L-threo isomers) $C_{23}H_{51}N_2O_5P$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 467 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C	**1 mg**

Sphingosine Phosphates



Catalog number 1803

1803	**D-erythro-Sphingosine-1-phosphate** S-1-P, S-P-A $C_{18}H_{38}NO_5P$ **CAS#:** 26993-30-6 **Source:** synthetic **Mol. Wt.:** 380 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/40% dimethylamine, 5:15:3, 1mg/ml; chloroform plus a few drops of TFA **Storage:** –20°C **References:** 10,11,12,13,14	**5 mg**
1852	**D-erythro-Dihydrosphingosine-1-phosphate** $C_{18}H_{40}NO_5P$ **CAS#:** 19794-97-9 **Source:** synthetic **Mol. Wt.:** 382 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/40% dimethylamine, 5:15:3, 1mg/ml; chloroform plus a few drops of TFA **Storage:** –20°C	**5 mg**
2046	**N-Hexadecanoyl-D-erythro-sphingosine-1-phosphate, NH_4^+salt** N-C16:0-Ceramide-1-phosphate $C_{34}H_{68}NO_6P$ **Source:** synthetic **Mol. Wt.:** 618 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/acetic acid, 60:15:25 **Storage:** –20°C	**5 mg**

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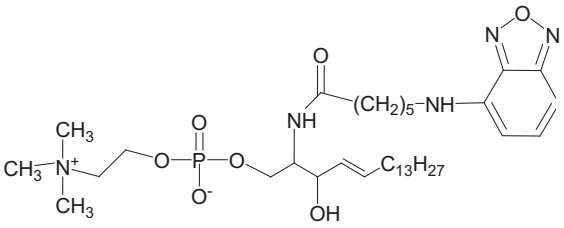
Fluorescent Sphingomyelins



Catalog number 1912

Excitation: 460 nm
Emission: 535 nm

1912 **N-Hexanoyl-NBD-sphingosylphosphorylcholine** **100 µg**
1912-001 N-C6:0-NBD-sphingomyelin, fluorescent; N-C6:0-NBD-sphingosylphosphorylcholine; fluorescent sphingomyelin; N-(NBD-aminocaproyl)-sphingomyelin **1 mg**
$C_{35}H_{61}N_6O_9P$ **CAS#:** 94885-04-8

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 740 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C

Mixture of D-erythro and L-threo isomers

1619 **N-Dodecanoyl-NBD-sphingosylphosphorylcholine** **100 µg**
1619-001 N-C12:0-NBD-sphingomyelin, fluorescent; N-C12:0-NBD-sphingosylphosphorylcholine; fluorescent sphingomyelin; N-(NBD-aminolauroyl)-sphingomyelin $C_{41}H_{73}N_6O_9P$ **1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 825 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol
Storage: –20°C

Mixture of D-erythro and L-threo isomers

See Biochemicals and Reagents section (page 87) for additional fluorescent labeled products.

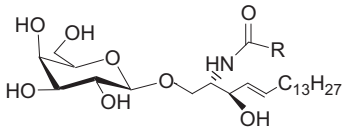
Compounds with fluorescent labels other than NBD are available on custom basis. Contact Technical Service for more information.

Glycosphingolipids

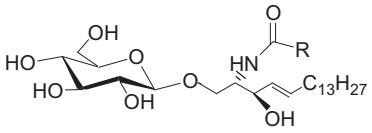
Glycosphingolipids are widely distributed in animal and plant tissues. They consist of a ceramide (Cer) bound in glycosidic linkage through the primary hydroxyl to a mono- or oligosaccharide which may contain substituents such as a sulfate, acetate, or phosphate group. They are amphiphilic and the less glycosylated compounds can be dispersed in buffers by dissolving them in a detergent or organic solvent (EtOH, DMSO, isoPrOH) and mixing by sonication.

Galactosphingolipids, mainly GalCer (cerebrosides) and its sulfate ester, occur in large amounts in the nervous system. Glucosphingolipids, the simplest of which is GlcCer (glucocerebrosides), are very widely distributed, particularly in nerve cell membranes. GlcCer is isolated from a variety of natural sources including human, bovine, and plant. Each of these sources has a heterogeneity in the fatty acid content of the ceramide as well as an occasional variation in the sphingoid chain. Globosides (containing both glucose and galactose) are a prominent group of glycosphingolipids, they contain an α-linked galactose moiety and are typically located in blood cell membranes. Gangliosides are another prominent group of glycosphingolipids; they are acidic because of substitution with sialic (neuraminic) acid. The glycosphingolipids function in a wide range of enzyme and structural interactions, such as immunological or membrane recognition phenomena, binding of microbial pathogens, hormone and growth factor actions, cancer cell growth and malignancy, atheroscerosis, genetic disease errors, blood group determinants, etc. Tissues change in glycosphingolipid composition during embryogenesis, maturation, aging, and other vital physiological processes. Some glycosphingolipids stimulate cell proliferation, others induce apoptosis, effects of great significance to cancer therapy and maturational development. Marked differences in glycosphingolipid composition are seen in normal and cancerous cells. See references 41, 199-210.
See Literature References on page 99.

Galactosylceramides and Glucosylceramides



Galactosylceramide



Glucosylceramide

1050 **Cerebrosides** **50 mg**
Galactosylceramide, ceramide beta-D-galactoside
$C_{48}H_{93}NO_8$ **CAS#:** 85305-88-0

Source: natural, bovine **Mol. Wt.:** 812 (lignoceryl form) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

Contains both hydroxy and non-hydroxy fatty acid side chains

1066 **Cerebroside, Kerasin (top spot)** **10 mg**
Galactosylceramide with mostly non-hydroxy fatty acid side chain
$C_{42}H_{81}NO_8$ **CAS#:** 536-13-0

Source: natural, bovine **Mol. Wt.:** 810 (nervonyl, [24:1]) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.5
Storage: –20°C

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1138 **Cerebroside, Phrenosin (bottom spot)** **10 mg**
Galactosylceramide with mostly 2-hydroxy fatty acid side chains
$C_{42}H_{81}NO_9$ **CAS#:** 37211-11-3

Source: natural, bovine **Mol. Wt.:** 743 (2-hydroxystearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.5 **Storage:** –20°C

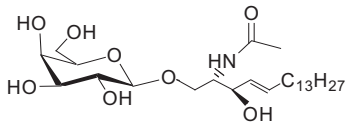
1305 **Psychosine, (in free amine form)** **10 mg**
lyso-Cerebroside; 1-beta-D-galactosylsphingosine
$C_{24}H_{47}NO_7$ **CAS#:** 2238-90-6

Source: semisynthetic, bovine **Mol. Wt.:** 461 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** ethanol, chloroform/methanol/water 5:1:0.1
Storage: –20°C **References:** 248,249,250

1914 **N-Stearoyl-D_{35}-psychosine, perdeuterated** **5 mg**
Cerebrosides with N-C18:0-D_{35} fatty acid side chain $C_{42}H_{46}D_{35}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 762 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, hot ethanol, chloroform/methanol 2:1
Storage: –20°C

Deuterium labeled stearoyl-sidechain



Catalog number 1325

1325 **N-Acetyl-psychosine** **10 mg**
N-C2:0-Cerebroside; cerebroside with C2:0 fatty acid $C_{26}H_{49}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 503 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1335 **N-Pentadecanoyl-psychosine** **5 mg**
N-C15:0-Cerebroside $C_{39}H_{75}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 685 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/ methanol, 2:1 **Storage:** –20°C

1334 **N-Octanoyl-β-D-galactosylceramide** **10 mg**
1334-50 N-C8:0-Galactosylceramide $C_{32}H_{61}NO_8$ **50 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 588 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/ methanol, 9:1, ethanol, methanol
Storage: –20°C

1621 **N-Hexanoyl-NBD-galactosylceramide** **100 µg**
1621-001 N-C6:0-NBD-beta-D-galactosylsphingosine; N-C6:0-NBD-cerebroside; N-C6:0-NBD-galactosylceramide, fluorescent; N-(NBD-aminocaproyl)-galactosylsphingosine $C_{36}H_{59}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/ methanol, 5:1, methanol
Storage: –20°C

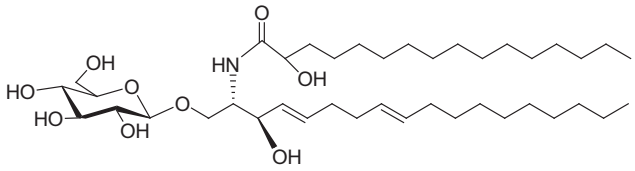
1633 **N-Dodecanoyl-NBD-galactosylceramide** **100 µg**
1633-001 N-C12:0-NBD-beta-D-galactosylsphingosine; N-(NBD-aminododecanoyl)-beta-D-galactosylsphingosine; N-C12:0-NBD-cerebroside; N-C12:0-NBD-galactosylceramide, fluorescent $C_{42}H_{71}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine spinal cord **Mol. Wt.:** 822 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/ methanol, 2:1; chloroform; DMSO
Storage: –20°C

1521 **Glucocerebrosides** **5 mg**
1521-50 Glucosylceramide; ceramide beta-D-glucoside $C_{46}H_{89}NO_8$ **50 mg**

Source: natural, bovine buttermilk **Mol. Wt.:** 784 (docosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

See Table III (p 90-94) for side chain variants



Catalog number 1522

1522 **Glucocerebrosides, plant** **5 mg**
1522-100 Glucosylceramide; ceramide beta-D-glucoside $C_{40}H_{75}NO_9$ **100 mg**

Source: natural, plant **Mol. Wt.:** 714 (2-hydroxyhexadecanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

Sphingoid backbone is >95% 4,8-sphingadiene (C18:2 t,t-4,8) and most of the fatty acids are of the 2-hydroxy type. See Table III page 90-94.

1622 **N-Hexanoyl-NBD-glucosylceramide** **100 µg**
1622-001 N-C6:0-NBD-beta-D-glucosylsphingosine; N-C6:0-NBD-glucosylceramide, fluorescent $C_{36}H_{59}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 5:1, methanol
Storage: –20°C

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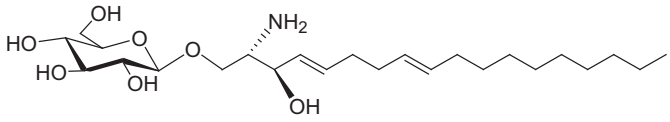
1306 **Glucopsychosine** **5 mg**

Glucosylsphingosine; lyso-glucocerebroside; 1-beta-D-glucosylsphingosine
$C_{24}H_{47}NO_7$ **CAS#:** 52050-17-6

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 461 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** ethanol, methanol, chloroform/methanol 2:1
Storage: –20°C



Catalog number 1310

1310 **Glucopsychosine** **5 mg**

Glucosylsphingosine; lyso-glucocerebroside; 1-beta-D-glucosylsphingadienine
$C_{24}H_{45}NO_7$ **CAS#:** 52050-17-6

Source: natural, plant **Mol. Wt.:** 460 (based on 1-beta-D-glucosylsphinga-4,8-dienine)
Purity: 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 4:1
Storage: –20°C

Sphingoid backbone is >95% 4,8-sphingadiene (C18:2 t,t-4, 8)

1531 **N-Docosanoyl-glucopsychosine** **1 mg**

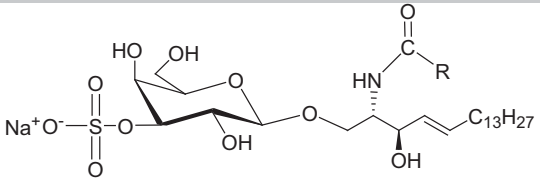
Glucocerebroside with C22:0 fatty acid side chain; N-Docosanoyl-β-glucosylsphingosine $C_{46}H_{89}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 784 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform **Storage:** –20°C

1533 **N-Palmitoyl-D_3-glucopsychosine, deuterated** **1 mg**

N-C16:0-D_3-Glucopsychosine; Glucocerebroside with C16:0-D_3 fatty acid side chain $C_{40}H_{74}D_3NO_8$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 703 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C



Catalog number 1049

1049 **Sulfatides** **50 mg**

Ceramide-galactoside-3-sulfate; cerebroside sulfate $C_{42}H_{80}NNaO_{11}S$
CAS#: 85496-63-5

Source: natural, bovine **Mol. Wt.:** 830 (stearoyl) Na^+ Salt **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.1 (if needed, a few drops of acetic acid) DMSO **Storage:** –20°C **References:** 64,65,66

1904	**lyso-Sulfatide (NH_4^+ salt)** Sphingosine-1-galactoside-3-sulfate $C_{24}H_{47}NO_{10}S$ **CAS#:** 38621-58-8 **Source:** semisynthetic, bovine **Mol. Wt.:** 542 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C **References:** 64,71,72	**1 mg**
2076	**N-Acetyl-sulfatide** N-C2:0-sulfatide; N-acetyl-sphingosyl-beta-D-galactoside-3-sulfatide $C_{26}H_{49}NO_{11}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 584 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 1:1, ethanol, methanol **Storage:** –20°C	**1 mg**
1875	**N-Palmitoyl-sulfatide** Sulfatide with C16:0 fatty acid side chain; N-palmitoyl-sphingosyl-beta-D-galactoside-3-sulfate $C_{40}H_{77}NO_{11}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 780 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C **References:** 64,71,72	**1 mg**
1888	**N-Tetracosanoyl-sulfatide** N-C24:0-Sulfatide; N-tetracosanoyl-sphingosyl-beta-D-galactoside-3-sulfate $C_{48}H_{93}NO_{11}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 892 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C	**1 mg**
1536	**N-Octadecanoyl-D_3-sulfatide** N-C18:0-D_3-Sulfatide $C_{42}H_{78}D_3NO_{11}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 811 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/DI water 2:1:0.1 **Storage:** –20°C	**1 mg**
1632 **1632-001**	**N-Dodecanoyl-NBD-sulfatide** N-C12:0-NBD-sulfatide; N-Dodecanoyl-NBD-lyso-sulfatide; N-Dodecanoyl-NBD-sphingosyl-beta-D-galactoside-3-sulfate $C_{42}H_{71}N_5O_{14}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 901 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C	**100 µg** **1 mg**

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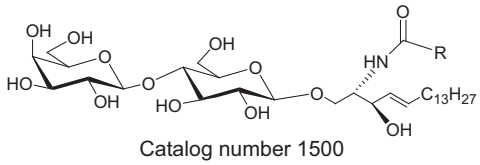
Lactosylceramides



Catalog number 1500

1500 **Lactosylceramide** **1 mg**
LC, lactocerebrosides; CDH, ceramide beta-lactoside
$C_{48}H_{91}NO_{13}$ **CAS#:** 4682-48-8

Source: natural, porcine RBC **Mol. Wt.:** 890 (stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 5:1:0.1, DMSO
Storage: –20°C **References:** 127,128,129

Contains 2-hydroxy fatty acids (See Table III)

1507 **Lactosylceramide** **5 mg**
1507-50 LC; lactocerebrosides; CDH, ceramide beta-lactoside $C_{53}H_{101}NO_{13}$ **50 mg**
CAS#: 4682-48-8

Source: natural, bovine buttermilk **Mol. Wt.:** 960 (tricosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 5:1:0.1
Storage: –20°C **References:** 127,128,129

1517 **lyso-Lactosylceramide** **1 mg**
Lactosylsphingosine; lyso-LC $C_{30}H_{57}NO_{12}$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 623 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

1532 **N-Palmitoyl-lactosylceramide** **1 mg**
Lactosylceramide with C16:0 fatty acid side chain $C_{46}H_{87}NO_{13}$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 862 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

1534 **N-Palmitoyl-D_3-lactosylceramide, deuterated** **1 mg**
N-C16:0-D_3-Lactosylceramide; lactosylceramide with C16:0-D_3 fatty acid side chain $C_{46}H_{84}D_3NO_{13}$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 864 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 5:1:0.1 **Storage:** –20°C

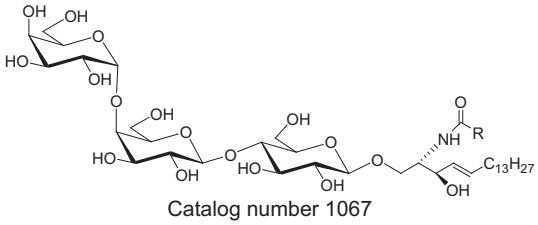
1629 **N-Hexanoyl-NBD-lactosylceramide** **50 ug**
1629-001 N-Hexanoyl-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-lactosylceramide, fluorescent; fluorescent LC; N-(NBD-aminocaproyl)-lactosylsphingosine $C_{42}H_{69}N_5O_{16}$ **1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 900 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1630	**N-Dodecanoyl-NBD-lactosylceramide**	**50 µg**
1630-001	N-Dodecanoyl-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-lactosylceramide, fluorescent; fluorescent LC; N-(NBD-aminolauroyl)-lactosylsphingosine $C_{48}H_{81}N_5O_{16}$	**1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 984 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

Ceramide Trihexosides



Catalog number 1067

1067	**Ceramide trihexosides**	**1 mg**
1067-10	CTH; Gb3; globotriaosylceramide $C_{60}H_{113}NO_{18}$ **CAS#:** 71965-57-6	**10 mg**

Source: natural, porcine RBC **Mol. Wt.:** 1137 (tetracosanoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, DMSO, hot methanol
Storage: –20°C **References:** 135,136,137,138,139

Contains hydroxy and non-hydroxy fatty acid side chains

1513	**Ceramide trihexosides (top spot)** CTH with non-hydroxy fatty acid side chain $C_{54}H_{101}NO_{18}$	**0.5 mg**

Source: natural, porcine RBC **Mol. Wt.:** 1052 (stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C
References: 130,131,132,133,134

1514	**Ceramide trihexosides (bottom spot)** CTH with hydroxy fatty acid side chain $C_{54}H_{101}NO_{19}$	**0.5 mg**

Source: natural, porcine RBC **Mol. Wt.:** 1068 (hydroxystearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 1:1, DMSO, hot methanol
Storage: –20°C **References:** 15,16

1520	**lyso-Ceramide trihexoside** lyso-CTH; lyso-globotriaosylsphingosine $C_{36}H_{67}NO_{17}$ **CAS#** 126550-86-5	**1 mg**

Source: semisynthetic, porcine RBC **Mol. Wt.:** 786 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C
References: 109,110,111,112,113

1523	**N-Heptadecanoyl ceramide trihexoside** N-C17:0-Ceramide trihexoside; N-heptadecanoyl globotriaosylceramide $C_{53}H_{99}NO_{18}$	**0.5 mg**

Source: semisynthetic, porcine RBC **Mol. Wt.:** 1038 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1:, DMSO, hot methanol
Storage: –20°C

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1524 **N-Tricosanoyl ceramide trihexoside** **0.5 mg**
N-C23:0-Ceramide trihexoside; N-tricosanoyl globotriaosylceramide
$C_{59}H_{111}NO_{18}$

Source: semisynthetic, porcine RBC **Mol. Wt.:** 1122 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1:, DMSO, hot methanol
Storage: –20°C

1631 **N-Dodecanoyl-NBD-ceramide trihexoside** **100 µg**
1631-001 N-C12:0-NBD-CTH; N-C12:0-NBD-globotriaosylceramide; N-(NBD-aminolauroyl) ceramide trihexoside $C_{54}H_{91}N_5O_{21}$ **1 mg**

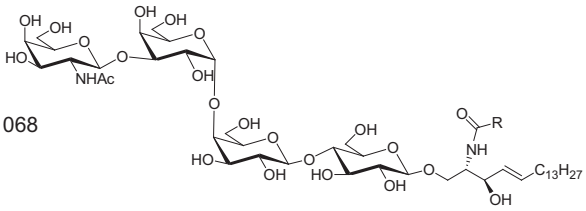
Source: semisynthetic, porcine RBC **Mol. Wt.:** 1145 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1: DMSO; hot methanol
Storage: –20°C

1537 **N-Octadecanoyl-D_3-ceramide trihexoside** **0.5 mg**
C18:0-D_3-CTH; C18:0-D_3-Gb3; N-Octadecanoyl-D_3-globotriaosylceramide
$C_{54}H_{98}D_3NO_{18}$

Source: semisynthetic, porcine RBC **Mol. Wt.:** 1055 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1:, DMSO **Storage:** –20°C

Globosides

Catalog number 1068



1068 **Globosides** **5 mg**
Gb4; globotetrahexosylceramide $C_{68}H_{126}N_2O_{23}$ **CAS#:** 11034-93-8

Source: natural, porcine RBC **Mol. Wt.:** 1340 (tetracosanoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, DMSO, hot methanol
Storage: –20°C **References:** 163,164,165

Labeled Glycolipids

Stable Isotopes

1914 **N-Stearoyl-D_{35}-psychosine, perdeuterated** **5 mg**
Cerebrosides with N-C18:0-D_{35} fatty acid side chain $C_{42}H_{46}D_{35}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 762 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, hot ethanol, chloroform/methanol 2:1
Storage: –20°C

Deuterium labeled stearoyl-sidechain

1533	**N-Palmitoyl-D_3-glucopsychosine, deuterated** N-C16:0-D_3-Glucopsychosine; glucocerebroside with C16:0-D_3 fatty acid side chain $C_{40}H_{74}D_3NO_8$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 703 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C	**1 mg**
1534	**N-Palmitoyl-D_3-lactosylceramide, deuterated** N-C16:0-D_3-Lactosylceramide; lactosylceramide with C16:0-D_3 fatty acid side chain $C_{46}H_{84}D_3NO_{13}$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 864 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 5:1:0.1 **Storage:** –20°C	**1 mg**
1536	**N-Octadecanoyl-D_3-sulfatide** N-C18:0-D_3-Sulfatide $C_{42}H_{78}D_3NO_{11}S$ **Source:** semisynthetic, bovine **Mol. Wt.:** 811 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/DI water 2:1:0.1 **Storage:** –20°C	**1 mg**
1537	**N-Octadecanoyl-D_3-ceramide trihexoside** C18:0-D_3-CTH; C18:0-D_3-Gb3; N-Octadecanoyl-D_3-globotriaosylceramide $C_{54}H_{98}D_3NO_{18}$ **Source:** semisynthetic, porcine **Mol. Wt.:** 1055 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1:, DMSO **Storage:** –20°C	**0.5 mg**

Fluorescent Compounds

1621 **1621-001**	**N-Hexanoyl-NBD-galactosylceramide** N-C6:0-NBD-beta-D-galactosylsphingosine; N-C6:0-NBD-cerebroside; N-C6:0-NBD-galactosylceramide, fluorescent; N-(NBD-aminocaproyl)-beta-D-galactosylsphingosine $C_{36}H_{59}N_5O_{11}$ **Source:** semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 5:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1622 **1622-001**	**N-Hexanoyl-NBD-glucosylceramide** N-C6:0-NBD-beta-D-glucosylsphingosine; N-C6:0-NBD-glucosylceramide, fluorescent; N-(NBD-aminocaproyl)-beta-D-glucosylsphingosine $C_{36}H_{59}N_5O_{11}$ **Source:** semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 5:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1629 **1629-001**	**N-Hexanoyl-NBD-lactosylceramide** N-Hexanoyl-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-lactosylceramide, fluorescent: fluorescent LC; N-(NBD-aminocaproyl)-beta-D-lactosylsphingosine $C_{42}H_{69}N_5O_{16}$ **Source:** semisynthetic, bovine buttermilk **Mol. Wt.:** 900 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C	**50 ug** **1 mg**

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1630	**N-Dodecanoyl-NBD-lactosylceramide**	**50 µg**
1630-001	N-Dodecanoyl-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-lactosylceramide, fluorescent; fluorescent LC; N-(NBD-aminolauroyl)-beta-D-lactosylsphingosine $C_{48}H_{81}N_5O_{16}$	**1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 984 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1631	**N-Dodecanoyl-NBD-ceramide trihexoside**	**100 µg**
1631-001	N-C12:0-NBD-CTH; N-C12:0-NBD-globotriaosylceramide; N-(NBD-aminolauroyl) ceramide trihexoside $C_{54}H_{91}N_5O_{21}$	**1 mg**

Source: semisynthetic, porcine RBC **Mol. Wt.:** 1145 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1: DMSO; hot methanol
Storage: –20°C

1632	**N-Dodecanoyl-NBD-sulfatide**	**100 µg**
1632-001	N-C12:0-NBD-sulfatide; N-Dodecanoyl-NBD-lyso-sulfatide; N-Dodecanoyl-NBD-sphingosyl-beta-D-galactoside-3-sulfate; N-(NBD-amniolauroyl) sulfatide $C_{42}H_{71}N_5O_{14}S$	**1 mg**

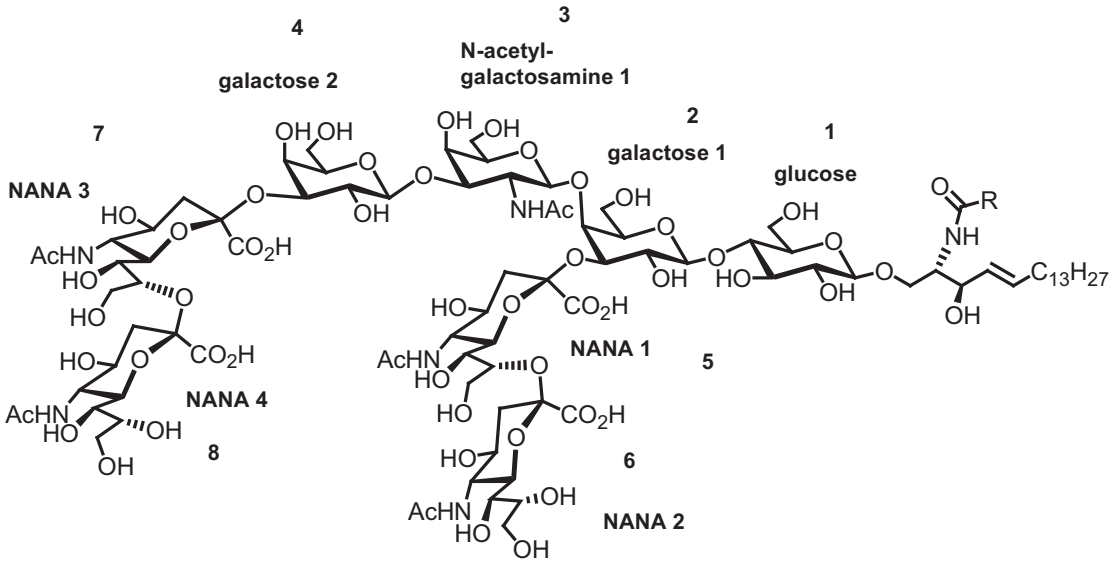
Source: semisynthetic, bovine **Mol. Wt.:** 901 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

See Biochemicals and Reagents section (page 87) for additional fluorescent labeled products.

Compounds with fluorescent labels other than NBD are available on custom basis. Contact Technical service for more information.

Gangliosides

The diagram below can be used with the general formulas given in the ganglioside descriptions to construct the individual structures.



1064 **Gangliotetraosylceramide** **1 mg**
Asialo GM_1; Gg4 $C_{62}H_{114}N_2O_{23}$ **CAS#:** 71012-19-6

Source: semisynthetic, bovine **Mol. Wt.:** 1256 (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 73,114,140,141

General formula: 1,2,3,4

1512 **Gangliotriosylceramide** **100 µg**
Asialo GM_2; Gg3 $C_{56}H_{104}N_2O_{18}$

Source: semisynthetic, human **Mol. Wt.:** 1093 (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 246,247

General formula: 1,2,3

1061 **Monosialoganglioside GM_1 (NH_4^+ salt)** **5 mg**
1061-50 GM_1 $C_{73}H_{131}N_3O_{31}•NH_3$ **CAS#:** 37758-47-7 **50 mg**

Source: natural, bovine brain **Mol. Wt.:** 1547 + NH_3 (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 17,18,19,73,76,144

General formula: 1,2,3,4,5

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1518 **lyso-Monosialoganglioside GM_1 (NH_4^+ salt)** **500 µg**
lyso-GM_1 $C_{55}H_{97}N_3O_{30} \bullet NH_3$ **CAS#:** 171483-40-2

Source: semisynthetic, bovine **Mol. Wt.:** 1280 +NH_3 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.2 **Storage:** –20°C **References:** 73,76,245

1526 **Fucosylated monosialoganglioside GM_1 (NH_4^+ salt)** **500 µg**
Fucosyl-GM_1 $C_{79}H_{141}N_3O_{35} \bullet NH_3$ **CAS#:** 71812-11-8

Source: natural, porcine **Mol. Wt.:** 1693 + NH_3 (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 251,252,253,254

2050 **N-Octadecanoyl-D_3-monosialoganglioside GM_1 (NH_4^+ salt)** **0.5 mg**
N-D_3-Stearoyl GM_1 $C_{73}H_{128}N_3O_{31}D_3 \bullet NH_3$

Source: semisynthetic, bovine brain **Mol. Wt.:** 1550 + NH_3 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C

1502 **Monosialoganglioside GM_2 (NH_4^+ salt)** **500 µg**
GM_2 $C_{67}H_{121}N_3O_{26} \bullet NH_3$ **CAS#:** 19600-01-2

Source: natural, human Tay-Sachs **Mol. Wt.:** 1385+ NH_3 (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 73,76,18,77

General formula: 1,2,3,5

1503 **Monosialoganglioside GM_3 (NH_4^+ salt)** **1 mg**
GM_3 $C_{64}H_{118}N_2O_{21} \bullet NH_3$ **CAS#:** 54827-14-4

Source: natural, bovine buttermilk **Mol. Wt.:** 1252+ NH_3 (tricosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, forms micellar solution in water **Storage:** –20°C
References: 18,19,20,21,73,76,78,79

General formula: 1,2,5

1535 **Monosialoganglioside GM4, egg (NH_4^+ salt)** **0.5 mg**
GM_4 $C_{57}H_{106}N_2O_{17} \bullet NH_3$

Source: natural, egg, chicken **Mol. Wt.:** 1091+NH_3 (2-hydroxydocosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, forms micellar solution in water **Storage:** –20°C **References:** 18,22,23,73,76

General formula: 2,5

1062 **Disialoganglioside GD_{1a} (NH_4^+ salt)** **5 mg**
GD_{1a} $C_{84}H_{148}N_4O_{39} \bullet 2NH_3$ **CAS#:** 12707-58-3

Source: natural, bovine brain **Mol. Wt.:** 1838 + $2NH_3$ (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 18,73,142,143

General formula: 1,2,3,4,5,7

1501 **Disialoganglioside GD_{1b} (NH_4^+salt)** **1 mg**

GD_{1b} $C_{84}H_{148}N_4O_{39}•2NH_3$ **CAS#:** 19553-76-5

Source: natural, bovine brain **Mol. Wt.:** 1838+ $2NH_3$ (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C **References:** 73,18,74,75

General formula: 1,2,3,4,5,6

1527 **Disialoganglioside GD_2 (NH_4^+salt)** **0.5 mg**

GD_2 $C_{78}H_{141}N_5O_{34}•2NH_3$

Source: semisynthetic, rabbit **Mol. Wt.:** 1693 + $2NH_3$ **Purity:** 98+% by TLC, MS **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C

1504 **Disialoganglioside GD_3 (NH_4^+ salt)** **5 mg**

GD_3 $C_{75}H_{135}N_3O_{29}•2NH_3$ **CAS#:** 62010-37-1

Source: natural, bovine buttermilk **Mol. Wt.:** 1543+$2NH_3$ (tricosanoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, forms micellar solution in water **Storage:** –20°C **References:** 20,21,24,73,76,125,126

General formula: 1,2,5,6

1063 **Trisialoganglioside GT_{1b} (NH_4^+ salt)** **5 mg**

GT_{1b} $C_{95}H_{165}N_5O_{47}•3NH_3$ **CAS#:** 59247-13-1

Source: natural, bovine brain **Mol. Wt.:** 2129 + $3NH_3$ (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 73,154,155,156

General Formula: 1,2,3,4,5,6,7

1516 **Tetrasialoganglioside GQ_{1b} (NH_4^+ salt)** **100 µg**

GQ_{1b} $C_{106}H_{182}N_6O_{55}•4NH_3$ **CAS#:** 68652-37-9

Source: natural, bovine **Mol. Wt.:** 2421+$4NH_3$ (stearoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 18,25

General formula: 1,2,3,4,5,6,7,8

1065 **Purified mixed gangliosides, bovine (NH_4^+ salt)** **25 mg**

Mixed gangliosides

Source: natural, bovine brain **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water 2:1:0.1, forms micellar solution in water **Storage:** –20°C **References:** 18,73,76

Approximately 98% GM_1, GD_{1a}, GD_{1b} and GT_{1b}, remaining 2% other gangliosides

1525 **Purified mixed gangliosides, porcine, (NH_4^+ salt)** **25 mg**

Source: natural, porcine **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol/water 2:1:0.1, forms micellar solution in water
Storage: –20°C

Approximately 98% GM_1, GD_{1a}, GD_{1b} and GT_{1b}, remaining 2% other gangliosides

Glycosphingolipid Reference Mixes for TLC

These mixtures are qualitative standards prepared from our purified glycosphingolipids.

1505 **Neutral glycosphingolipid qualmix** **1 mg/ml, 1 ml**
Glycosylceramides, qualitative mix

Source: natural, bovine and porcine **Appearance:** liquid
Solvent: chloroform/methanol 2:1 **Solubility:** chloroform/methanol 2:1
Storage: –20°C

Contains: cerebrosides, lactosylceramide, ceramide trihexoside, globoside

1508 **Monosialoganglioside mix** **0.5 mg/ml, 1 ml**
GM_3, GM_2, GM_1 qualitative mix

Source: natural, bovine, human **Appearance:** liquid
Solvent: chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: GM_3, GM_2, GM_1

1509 **Disialoganglioside mix** **0.5 mg/ml, 1 ml**
GD_3, GD_{1a}, GD_{1b}, qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: GD_3, GD_{1a}, GD_{1b}

1510 **Lactosylceramide and sialosyl derivatives mix** **0.5 mg/ml, 1 ml**
LC, GM_3, GD_3 qualitative mix

Source: natural, bovine buttermilk **Appearance:** liquid
Solvent: chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: LC, GM_3, GD_3

1511 **Gangliotetraosylceramide and sialosyl derivatives mix** **0.5 mg/ml, 1 ml**
asialo GM_1, GM_1, GD_{1a}, GD_{1b}, GT_{1b} qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: asialo GM_1, GM_1, GD_{1a}, GD_{1b}, GT_{1b}

Antibodies Directed Against Glycolipids

These monoclonal and polyclonal antibodies are directed against the carbohydrate chains of Matreya's glycolipids. The same carbohydrate moieties are found on many glycoproteins. The antibodies are for use in ELISA or TLC immunoblotting applications (3). All antibodies are quality tested by actual performance in ELISA and TLC immunoblotting. The antibodies contain no preservatives and are shipped on dry ice.
See Literature References on page 99.

1977 **Anti-ganglioside GD_3** **50 µl**
Monoclonal antibody to GD_3, isotype IgG/IgM

Source: natural, mouse hybridoma R-24 cell line **Appearance:** liquid
Solubility: water **Storage:** –20°C **References:** 26,27,28 **Dry Ice Charge Applies**

Suitable for TLC immunoblotting, ELISA

1950 **Anti-ganglioside asialo GM_1** **100 µl**
Polyclonal antibody to asialo GM_1, isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References: 26,29,114,115 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting. Slight cross reaction to GM_1

1951 **Anti-ganglioside asialo GM_2** **50 µl**
Polyclonal antibody to asialo GM_2, isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References: 26,29 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting

1954 **Anti-ganglioside GM_1** **100 µl**
Polyclonal antibody to GM_1, isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References: 26,29,96,97,98,99 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting. Slight cross reaction to asialo-GM_1

1961 **Anti-ganglioside GM_2 (NANA)** **50 µl**
Polyclonal antibody to GM_2 (NANA), isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References: 26,27,28,29,30,31,96,97,184,185 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting

1957 **Anti-ganglioside GM_4** **50 µl**
Polyclonal antibody to GM_4, isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References: 26,29 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting

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1960 **Anti-globoside GL-4** **50 µl**
Polyclonal antibody to GL-4, isotype IgG/IgM

Source: natural, rabbit **Appearance:** liquid **Solubility:** water **Storage:** –20°C
References:26,27,28,29,30,31,32 **Dry Ice Charge Applies**

Suitable for ELISA, TLC-immunoblotting

Enzyme Inhibitors

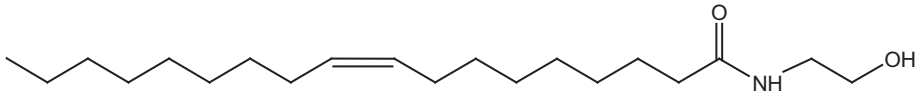
Ceramide: UDPglucose Transferase. PDMP (D,L-threo-1-phenyl-2-decanoylamino-3-morpholino-1-propanol-HCl) closely resembles the natural sphingolipid substrate of brain glucosyl transferase and is a very potent and competitive inhibitor of the enzyme (211). It has been shown to block outgrowth of neurites in cultured retina and to block glucolipid synthesis in cultured 3T3 cells (212). N.S. Radin and co-workers have shown (213) that PPMP has activity equivalent to that of PDMP when cell homogenates and brain and liver microsomes are used, but it is about 20 times more potent when used with intact cells. In another paper (214), Radin's group has shown that PDMP has substantial activity against Ehrlich ascites tumors in mice. Recent publications from the laboratory of Myles Cabot (215, 216) show that PPMP can reverse multi-drug resistance in cancer cells by causing a build-up of ceramide and preventing the synthesis of glycosylated ceramides. **See Literature References on page 99.**

Matreya also offers the resolved D- and L-threo-isomers of PDMP and PPMP.

Protein Kinase C Inhibitor. Sphingosine is a potent and reversible inhibitor of protein kinase C (217); it also has been shown at low concentrations to stimulate DNA synthesis and act synergistically with known growth factors (218). Note that Safingol (our L-threo-dihydrosphingosine) has also been shown to partially reverse multi-drug resistance in cancer cells (216) *via* inhibition of protein kinase C.

Dihydroceramide desaturase Inhibitor. Cyclopropenylceramide is the first known inhibitor of this enzyme and may allow significant studies on the role of ceramide in apoptosis. Matreya is the only source for this inhibitor. (222)

Ceramidase Inhibitors. N-Oleoylethanolamine has been shown to be an efficacious inhibitor of the ceramidase found in human kidney and cerebellum (219). It is specifically an inhibitor of acid ceramidase (220) with an IC_{50} of ca. 500 µM. N-Hexadecanoylethanolamine can be used as an inactive control. D-MAPP is a potent (IC_{50} approximately 5 µM) inhibitor of alkaline ceramidase. Its enantiomer L-MAPP is inactive as an inhibitor and acts as a substrate for this enzyme (220,221). **See Literature References on page 99.**



Catalog number 1751

1751 **N-Oleoylethanolamine** **100 mg**
NOE $C_{20}H_{39}NO_2$ **CAS#:** 111-58-0

Source: synthetic **Mol. Wt.:** 326 **Melting Point (°C):** 63-66 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, ethyl ether, DMSO
Storage: –20°C **References:** 33,34,35

Activity: acid ceramidase inhibitor

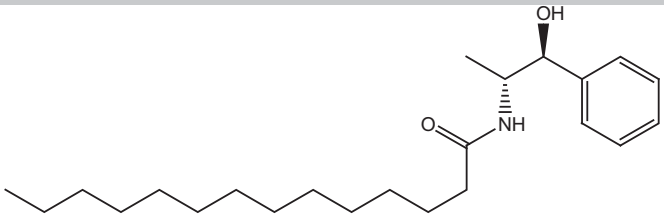
1786 **N-Hexadecanoylethanolamine** **100 mg**
$C_{18}H_{37}NO_2$ **CAS#** 544-31-0

Source: synthetic **Mol. Wt.:** 299 **Melting Point (°C):** 99-102 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, DMSO
Storage: –20°C **References:** 33,34,35

Activity: inactive as acid ceramidase inhibitor

1807 **L-threo-Dihydrosphingosine (Safingol)** **5 mg**
1807-025 L-threo-Sphinganine, C18 chain $C_{18}H_{39}NO_2$ **CAS#:** 15639-50-6 **25 mg**

Source: synthetic **Mol. Wt.:** 301 **Melting Point (°C):** 103-114 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C **References:** 3,4



Catalog number 1859

1859 **D-MAPP** **100 mg**
D-erythro-2-Tetradecanoylamino-1-phenyl-1-propanol $C_{23}H_{39}NO_2$
CAS#: 143492-39-1

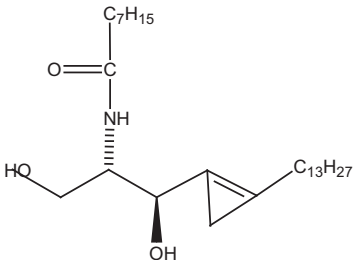
Source: synthetic **Mol. Wt.:** 361 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol **Storage:** –20°C

Activity: alkaline ceramidase inhibitor

1860 **L-MAPP** **100 mg**
L-erythro-2-Tetradecanoylamino-1-phenyl-1-propanol $C_{23}H_{39}NO_2$
CAS#: 143492-38-0

Source: synthetic **Mol. Wt.:** 361 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol **Storage:** –20°C

Activity: inactive as alkaline ceramidase inhibitor



Catalog number: 1886

1886 **N-C8:0-Cyclopropenylceramide** **1 mg**
1886-005 N-C8:0-CPPC; N-[(1R, 2S)-2-hydroxy-1-hydroxymethyl-2-(2-tridecyl-1-cyclopropenyl) ethyl] octanamide; GT_{11} $C_{27}H_{51}NO_3$ **5 mg**

Source: synthetic **Mol. Wt.:** 437 **Melting Point (°C):** 69-70 **Purity:** 98+% by ^1H NMR; HPLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C **References:** 36,37,38,39

Activity: Dihydroceramide desaturase inhibitor

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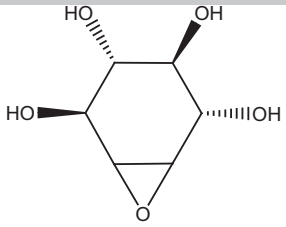
1887 **N-C16:0-Cyclopropenylceramide** **1 mg**
1887-005 N-C16:0-CPPC; N-[(1R, 2S)-2-hydroxy-1-hydroxymethyl-2-(2-tridecyl-1-cyclopropenyl) ethyl] hexadecamide $C_{35}H_{67}NO_3$ **5 mg**

Source: synthetic **Mol. Wt.:** 550 **Melting Point (°C):** 156-157 **Purity:** 98+% by ^{1}H NMR; HPLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C **References:** 37,38,39

Activity: Dihydroceramide desaturase inhibitor



Catalog number 1889

1889 **Conduritol B epoxide** **25 mg**
$C_6H_{10}O_5$ **CAS#:** 6090-95-5

Source: synthetic **Mol. Wt.:** 162 **Melting Point (°C):** 164-166 **Purity:** 98+% by TLC, NMR **Appearance:** solid **Solubility:** water, DMSO, methanol (slightly) **Storage:** –20°C

Inhibits α-glucosidase activity; specific inhibitor of glucocerebrosidase in cultured cells.

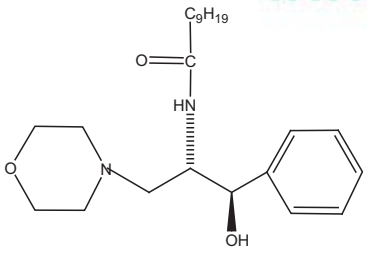
1719 **D,L-threo-PDMP** **100 mg**
D,L-threo-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol•HCl
$C_{23}H_{38}N_2O_3$•HCl **CAS#:** 80938-69-8

Source: synthetic **Mol. Wt.:** 427 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** ethanol, methanol, chloroform, DMSO **Storage:** –20°C **References:** 80,81,82,83
Activity: glucosyl ceramide synthase inhibitor

1720 **D,L-threo-PPMP** **100 mg**
D,L-threo-l-Phenyl-2-hexadecanoylamino-3-morpholino-1-propanol•HCl
$C_{29}H_{50}N_2O_3$•HCI **CAS#:** 149022-18-4

Source: synthetic **Mol. Wt.:** 511 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** alcohols, chloroform **Storage:** –20°C

Activity: glucosyl ceramide synthase inhibitor



Catalog number 1749

1749 **L-threo-PDMP** **10 mg**
L-threo-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol•HCl
$C_{23}H_{38}N_2O_3$•HCl **CAS#:** 109836-81-9

Source: synthetic **Mol. Wt.:** 427 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol, methanol **Storage:** –20°C

1753 **D,L-erythro-PPMP** **100 mg**
D,L-erythro-1-Phenyl-2-hexadecanoylamino-3-morpholino-1-propanol•HCl
$C_{29}H_{50}N_2O_3$•HCl

Source: synthetic **Mol. Wt.:** 511 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DSMO **Storage:** –20°C

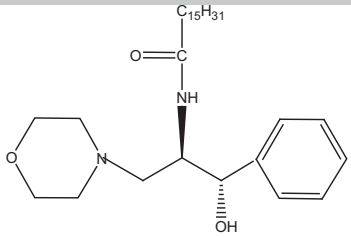
1755 **D,L-erythro-PDMP** **100 mg**
D,L-erythro-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol•HCl
$C_{23}H_{38}N_2O_3$•HCl **CAS#:** 109760-77-2

Source: synthetic **Mol. Wt.:** 427 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform, ethanol, methanol, DSMO **Storage:** –20°C

1756 **D-threo-PDMP** **10 mg**
D-threo-1-Phenyl-2-decanoylamino-3-morpholino-1-propanol•HCl
$C_{23}H_{38}N_2O_3$•HCl **CAS#:** 109836-82-0

Source: synthetic **Mol. Wt.:** 427 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol, methanol **Storage:** –20°C **References:** 40,41,42,43,80,81,83

Activity: glucosyl ceramide synthase inhibitor



Catalog number 1865

1865 **D-threo-PPMP** **10 mg**
D-threo-1-Phenyl-2-hexadecanoylamino-3-morpholino-1-propanol•HCl
$C_{29}H_{50}N_2O_3$•HCl

Source: synthetic **Mol. Wt.:** 511 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: ethanol, methanol **Storage:** –20°C **References:** 44,45,46,47,48

Activity: glucosyl ceramide synthase inhibitor

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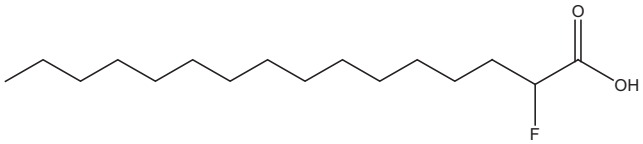
1868 **L-threo-PPMP** **10 mg**
L-threo-1-Phenyl-2-hexadecanoylamino-3-morpholino-1-propanol•HCl
$C_{29}H_{50}N_2O_3$•HCl

Source: synthetic **Mol. Wt.:** 511 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

1800 **Castanospermine** **25 mg**
1,6,7,8-tetrahydroxyoctahydroindolizine $C_8H_{15}NO_4$ **CAS#:** 79831-76-8

Source: natural, plant **Mol. Wt.:** 189 **Melting Point (°C):** 210-215 **Purity:** 98+% by TLC, NMR **Appearance:** solid **Solubility:** water, methanol/water, 90:10 **Storage:** –20°C



Catalog number 1717

1717 **2-Fluoropalmitic acid** **25 mg**
$C_{16}H_{31}FO_2$ **CAS#:** 89270-22-4

Source: synthetic **Mol. Wt.:** 274 **Melting Point (°C):** 83-85 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

Activity: Acyl-CoA synthase inhibitor

1718 **Methyl 2-fluoropalmitate** **10 mg**
$C_{17}H_{33}FO_2$

Source: synthetic **Mol. Wt.:** 288 **Melting Point (°C):** 36-38 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

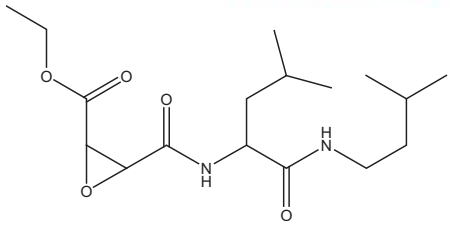
Activity: inactive ester of 2-fluoropalmitic acid

1750 **2,2-Difluoropalmitic acid** **25 mg**
$C_{16}H_{30}F_2O_2$

Source: synthetic **Mol. Wt.:** 292 **Melting Point (°C):** 50.8-53 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1858 **2-Acetyl-4-(1R, 2S, 3R, 4-tetrahydroxybutyl)-imidazole** **1 mg**
THI $C_9H_{14}N_2O_5$ **CAS#:** 94944-70-4

Source: synthetic **Mol. Wt.:** 230 **Melting Point (°C):** n/a **Purity:** 99% by HPLC, MS, NMR **Appearance:** solid **Solubility:** water **Storage:** –20°C
Referencs: 49,100,101



Catalog number 1752

1752 **EST** **5 mg**

E-64-d; Loxastatin $C_{17}H_{30}N_2O_5$ **CAS#:** 88321-09-9

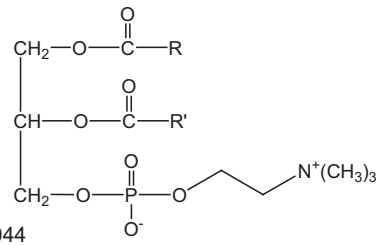
Source: synthetic **Mol. Wt.:** 342 **Melting Point (°C):** 125-127 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C **References:** 50, 84,85, 86, 87

Activity: cystein protease inhibitor

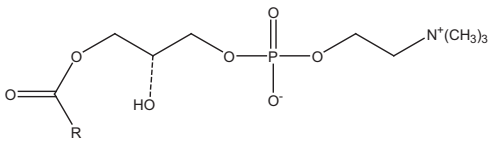
Glycerolipids

Glycerophospholipids

Natural Phospholipids



Catalog number 1044



Catalog number 1046

1044 **Lecithin** **50 mg/ml, 1 ml**

Phosphatidylcholine; PC $C_{44}H_{84}NO_8P$ **CAS#:** 8002-43-5

Source: natural, chicken, egg **Mol. Wt.:** 787 (oleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform, ethyl ether, ethanol
Storage: –20°C

See Table III page 93-97 for fatty acid content

1070 **Lecithin** **50 mg/ml, 1 ml**

Phosphatidylcholine; PC $C_{44}H_{84}NO_8P$ **CAS#:** 8002-43-5

Source: natural, bovine **Mol. Wt.:** 787 (oleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform, ethyl ether
Storage: –20°C

See Table III page 93-97 for fatty acid content

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1302 **Lecithin** **50 mg/ml, 1 ml**
Phosphatidylcholine; PC $C_{44}H_{80}NO_8P$ **CAS#:** 8002-43-5

Source: natural, plant **Mol. Wt.:** 782 (linoleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform, ethyl ether
Storage: –20°C

See Table III page 93-97 for fatty acid content

1046 **lyso-Lecithin** **50 mg**
lyso-Phosphatidylcholine $C_{24}H_{50}NO_7P$ **CAS#:** 9008-30-4

Source: semisynthetic, chicken, egg **Mol. Wt.:** 496 (palmitoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

See Table III page 93-97 for fatty acid content

1047 **Phosphatidylserine** **50 mg/ml, 1 ml**
PS $C_{42}H_{78}NO_{10}P$

Source: natural, bovine **Mol. Wt.:** 788 (oleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform, toluene
Storage: –20°C **References:** 160,161,162

See Table III page 93-97 for fatty acid content

1048 **Phosphatidylinositol (Na^+ salt)** **10 mg/ml, 1 ml**
PI $C_{45}H_{78}O_{13}P•Na$ **CAS#** 383907-36-6

Source: natural, plant **Mol. Wt.:** 881 (linoleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform, ethyl ether
Storage: –20°C **References:** 51,90,106,108

See Table III page 93-97 for fatty acid content

1336 **Phosphatidylinositol, plant, soy, (Na^+ salt)** **50 mg/ml, 1ml**
$C_{43}H_{78}O_{13}P•Na$ **CAS#** 383907-36-6

Source: natural, plant, soy **Mol. Wt.:** 834 +Na (linoleoyl and palmitoyl)
Purity: 98+% by TLC **Appearance:** liquid **Solvent:** chloroform
Solubility: chloroform, ethyl ether **Storage:** –20°C

1053 **Phosphatidic acid (NH_4^+ salt)** **50 mg**
PA $C_{39}H_{72}O_8P•NH_4^+$

Source: semisynthetic, chicken, egg **Mol. Wt.:** 718 + $NH4^+$ (oleoyl) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** –20°C

See Table III page 93-97 for fatty acid content

1045 **Phosphatidylethanolamine** **50 mg/ml, 1 ml**
PE $C_{41}H_{78}NO_8P$ **CAS#:** 39382-08-6

Source: natural, chicken, egg **Mol. Wt.:** 744 (oleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C
References: 116,117,182

See Table III page 93-97 for fatty acid content

1069 **Phosphatidylethanolamine** **50 mg/ml, 1 ml**
PE $C_{41}H_{78}NO_8P$ **CAS#:** 90989-93-8

Source: natural, bovine brain **Mol. Wt.:** 744 (oleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C
References: 116,117,118

1301 **Phosphatidylethanolamine** **50 mg/ml, 1 ml**
PE $C_{41}H_{74}NO_8P$ **CAS#:** 90989-93-8

Source: natural, plant **Mol. Wt.:** 740 (linoleoyl) **Purity:** 98+% by TLC
Appearance: liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C

See Table III page 93-97 for fatty acid content

1052 **Phosphoglycerides kit** **1 each**

Source: natural, egg, bovine, plant **Purity:** 98+% by TLC **Appearance:** liquid/solid
Solvent: various **Storage:** –20°C

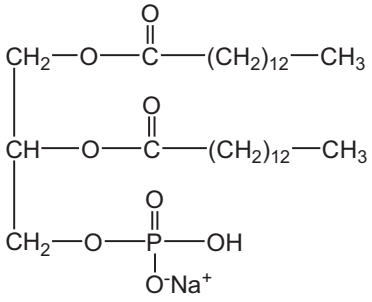
Individually packed in ampules and vials (Purity 98+%): Phosphatidic acid NH_4^+ salt 10mg; Phosphatidylethanolamine, egg (in 1 ml $CHCl_3$) 10mg; Sphingomyelin, bovine 10mg; Phosphatidylserine, bovine (in 1 ml $CHCl_3$) 10 mg; Lecithin, egg (in 1 ml $CHCl_3$) 10 mg; lyso-Lecithin, egg 10 mg; Cerebrosides, bovine 10mg; Sulfatides, bovine 10mg; Phosphatidylinositol, Na^+salt, plant (in 1 ml $CHCl_3$) 3mg

Synthetic Phospholipids

These phospholipids have 98+% chemical purity except where stated and 99% fatty acid chain purity. Store at -20° C.
Solubility: see individual entries

Phosphatidic acid derivatives

Catalog number 1428



1428 **1,2-Dimyristoyl-sn-glycero-3-phosphatidic acid (Na^+ salt)** **100 mg**
DMPA $C_{31}H_{60}O_8P•Na$ **CAS#:** 80724-31-8

Source: synthetic **Mol. Wt.:** 615 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol/acetic acid, 4:1:0.1 **Storage:** –20°C

1429 **1,2-Dipalmitoyl-sn-glycero-3-phosphatidic acid (Na^+ salt)** **100 mg**
DPPA $C_{35}H_{68}O_8P•Na$ **CAS#:** 71065-87-7

Source: synthetic **Mol. Wt.:** 671 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol/acetic acid, 4:1:0.1 **Storage:** –20°C

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1430 **1,2-Distearoyl-sn-glycero-3-phosphatidic acid (Na^+ salt)** **100 mg**
DSPA $C_{39}H_{76}O_8P•Na$ **CAS#:** 108321-18-2

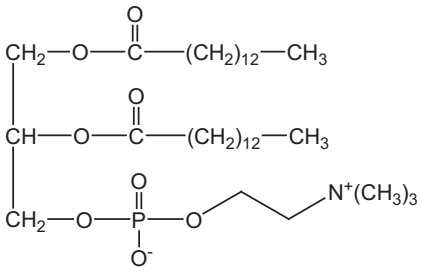
Source: synthetic **Mol. Wt.:** 727 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol/acetic acid, 4:1:0.1 **Storage:** –20°C

Phosphatidylcholines

1442 **1,2-Dilauroyl-sn-glycero-3-phosphorylcholine** **100 mg**
DLPC $C_{32}H_{64}NO_8P$ **CAS#:** 18194-25-7

Source: synthetic **Mol. Wt.:** 622 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

Catalog number 1425



1425 **1,2-Dimyristoyl-sn-glycero-3-phosphorylcholine** **100 mg**
DMPC $C_{36}H_{72}NO_8P$ **CAS#:** 18194-24-6

Source: synthetic **Mol. Wt.:** 678 **Purity:** 98+% by TLC **Appearance:** solid
Melting Point: 130-139°C **Solubility:** methylene chloride, methanol **Storage:** –20°C

1426 **1,2-Dipalmitoyl-sn-glycero-3-phosphorylcholine** **100 mg**
DPPC $C_{40}H_{80}NO_8P$ **CAS#:** 63-89-8

Source: synthetic **Mol. Wt.:** 734 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

1400 **1,2-Diheptadecanoyl-sn-glycero-3-phosphorylcholine** **50 mg**
DHDPC $C_{42}H_{84}NO_8P$ **CAS#:** 70897-27-7

Source: synthetic **Mol. Wt.:** 762 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

1427 **1,2-Distearoyl-sn-glycero-3-phosphorylcholine** **100 mg**
DSPC $C_{44}H_{88}NO_8P$ **CAS#:** 816-94-4

Source: synthetic **Mol. Wt.:** 790 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

1437 **1-Palmitoyl-2-oleoyl-sn-glycero-3-phosphorylcholine** **100 mg**
POPC $C_{42}H_{82}NO_8P$ **CAS#:** 26853-31-6

Source: synthetic **Mol. Wt.:** 760 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

1445 **1-Palmitoyl-sn-glycero-3-phosphorylcholine** **100 mg**
lyso-PPC $C_{24}H_{50}NO_7P$ **CAS#:** 17364-16-8

Source: synthetic **Mol. Wt.:** 496 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: methylene chloride, methanol **Storage:** –20°C

1409 **1-Stearoyl-2-linoleoyl-sn-glycero-3-phosphorylcholine** **25 mg/ml, 1ml**
$C_{44}H_{84}NO_8P$

Source: synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid
Solvent: chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C

1410 **1-Stearoyl-2-[9(Z),11(E)-octadecadienoyl]-sn-glycero-3-phosphorylcholine** **25 mg/ml, 1ml**
$C_{44}H_{84}NO_8P$

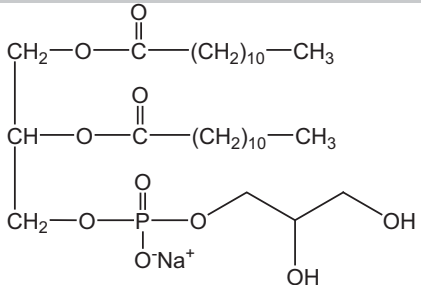
Source: synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid
Solvent: chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C

1411 **1-Stearoyl-2-[10(E),12(Z)-octadecadienoyl]-sn-glycero-3-phosphorylcholine** **25 mg/ml, 1ml**
$C_{44}H_{84}NO_8P$

Source: synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid
Solvent: chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C

Phosphatidylglycerols

Catalog number 1443



1443 **1,2-Dilauroyl-sn-glycero-3-phosphorylglycerol (Na^+ salt)** **100 mg**
DLPG $C_{30}H_{58}O_{10}P•Na$ **CAS#:** 73548-69-3

Source: synthetic **Mol. Wt.:** 632 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol, 5:1 **Storage:** –20°C

1431 **1,2-Dimyristoyl-sn-glycero-3-phosphorylglycerol (Na^+ salt)** **100 mg**
DMPG $C_{34}H_{66}O_{10}P•Na$ **CAS#:** 200880-40-6

Source: synthetic **Mol. Wt.:** 689 **Purity:** 98+% by TLC **Appearance:** solid
Melting Point: 120-129°C **Solubility:** chloroform/methanol, 5:1 **Storage:** –20°C

1432 **1,2-Dipalmitoyl-sn-glycero-3-phosphorylglycerol (Na^+ salt)** **100 mg**
DPPG $C_{38}H_{74}O_{10}P•Na$ **CAS#:** 200880-41-7

Source: synthetic **Mol. Wt.:** 745 **Purity:** 98+% by TLC **Appearance:** solid
Melting Point: 122-127°C **Solubility:** chloroform/methanol, 5:1 **Storage:** –20°C

1433 **1,2-Distearoyl-sn-glycero-3-phosphorylglycerol (Na^+ salt)** **100 mg**
DSPG $C_{42}H_{82}O_{10}P•Na$ **CAS#:** 4537-78-4

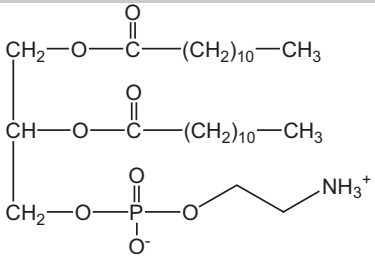
Source: synthetic **Mol. Wt.:** 801 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol, 5:1 **Storage:** –20°C

1438 **1-Palmitoyl-2-oleoyl-sn-glycero-3-phosphorylglycerol (Na^+ salt)** **100 mg**
POPG $C_{40}H_{76}O_{10}P•Na$ **CAS#:** 202070-86-8

Source: synthetic **Mol. Wt.:** 771 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol, 5:1 **Storage:** –20°C

Phosphatidylethanolamines

Catalog number 1444



1444 **1,2-Dilauroyl-sn-glycero-3-phosphorylethanolamine** **100 mg**
DLPE $C_{29}H_{58}NO_8P$ **CAS#:** 42436-56-6

Source: synthetic **Mol. Wt.:** 579 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform + methanol mixture **Storage:** –20°C

1434 **1,2-Dimyristoyl-sn-glycero-3-phosphorylethanolamine** **100 mg**
DMPE $C_{33}H_{66}NO_8P$ **CAS#** 998-07-2

Source: synthetic **Mol. Wt.:** 636 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/facetic acid 95:5; chloroform/methanol/water/acetic acid 100:30:10:2.5 **Storage:** –20°C

1435 **1,2-Dipalmitoyl-sn-glycero-3-phosphorylethanolamine** **100 mg**
DPPE $C_{37}H_{74}NO_8P$ **CAS#:** 923-61-5

Source: synthetic **Mol. Wt.:** 692 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/acetic acid 95:5; chloroform/methanol/water/acetic acid 100:30:10:2.5 **Storage:** –20°C

1436 **1,2-Distearoyl-sn-glycero-3-phosphorylethanolamine** **100 mg**
DSPE $C_{41}H_{82}NO_8P$ **CAS#:** 1069-79-0

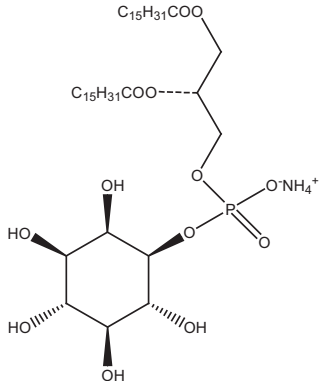
Source: synthetic **Mol. Wt.:** 748 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/acetic acid 95:5; chloroform/methanol/water/acetic acid 100:30:10:2.5 **Storage:** –20°C

1439	**1,2-Distearoyl-phosphatidylethanolamine-methyl-polyethyleneglycol conjugate-2000 (Na^+ salt)** DSPE-MPEG-2000 **CAS#:** 147867-65-0 **Source:** synthetic **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform **Storage:** –20°C	**100 mg**

Phosphatidylinositols

The metabolism of inositol lipids is involved in the signal transduction of many hormones, neurotransmitters and growth factors (51,189). In the classical pathway, phosphatidylinositol-specific phospholipase C (PI-PLC) hydrolyzes phosphatidyl 4,5-biphosphate (PIP_2) to yield 1,2-diacylglycerol (DAG) and inositol 1,4,5-triphosphate (IP_3). The role of IP_3 and DAG as second messengers is well recognized.

In a second, more recently discovered pathway, the activation of phosphoinositide (PI) 3-kinase results in the formation of three novel phosphatidyl (PI) lipids phosphorylated at the D3 position of the inositol ring: PI-3-P, PI-3,4-P_2 and PI-3,4,5-P_3 (190). These D3 lipids are not known substrates for any of the phospholipase C enzymes and function as second messengers. PI 3-kinase activity is correlated with many cellular processes, including the regulation of cell growth, oncogenic transformation, chemotaxis and receptor down-regulation among others (191, 192,193). The recent paper on the effect of PI3,4-P2 on the *Akt* proto-oncogene product (9) also contains protocols for applying PIP's to cell cultures. Matreya's synthetic phosphatidylinositols and inositol phosphates are excellent tools for investigating these second messengers, understanding the enzyme mechanisms involved in phosphoinositide metabolism (223,224) and for designing therapeutic pharmacological agents. The compounds are evaluated by ^1H and ^{31}P NMR to guarantee enantiomeric purity of >98%. **See Literature References on page 99.**



Catalog number 1779

1779	**Phosphatidylinositol, dipalmitoyl, (NH_4^+ salt)**	**0.5 mg**
1779-1	PI; DPPI (NH_4^+ salt) $C_{41}H_{78}O_{13}P•NH_4$	**1 mg**
	Source: synthetic **Mol. Wt.:** 828 **Purity:** 98+% by ^1H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** chlorofom/methanol/water 5:1:0.1 **Storage:** –20°C **References:** 105,106,107,108	

1773	**Phosphatidylinositol 3-phosphate, dipalmitoyl, (NH_4^+ salt)**	**100 µg**
1773-1	DPPI-3-P; PI-3-P dipalmitoyl (NH_4^+ salt) $C_{41}H_{77}O_{16}P_2 •3NH_4$	**1 mg**
1773-5		**5 mg**
	Source: synthetic **Mol. Wt.:** 942 **Purity:** 98+% by ^1H NMR, ^{31}P NMR, **Appearance:** solid **Solubility:** chloroform/methanol/water 1:1:0.3 **Storage:** –20°C **References:** 51,52,53,54	

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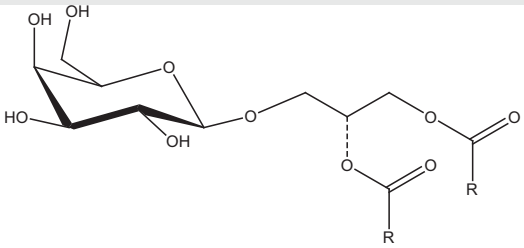
1919 **1919-1** **1919-5**	**Phosphatidylinositol 4-phosphate, dipalmitoyl, (NH_4^+ salt)** DPPI-4-P; PI-4-P dipalmitoyl (NH_4^+ salt) $C_{41}H_{77}O_{16}P_2 \bullet 3NH_4$ **Source:** synthetic **Mol. Wt.:** 942 **Purity:** 98+% by ^{1}H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** methanol, chloroform/methanol/water 1:1:0.3, slightly soluble in water **Storage:** –20°C	**100 µg** **1 mg** **5 mg**
1784 **1784-1** **1784-5**	**Phosphatidylinositol bis-4,5-phosphate, dioctanoyl, (NH_4^+ salt)** DOPI-4,5-P2; PI-4,5-P2 dioctanoyl (NH_4^+ salt) $C_{25}H_{49}O_{19}P_3 \bullet 5NH_4$ **Source:** synthetic **Mol. Wt.:** 831 **Purity:** 98+% by ^{1}H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** chloroform/methanol/water 1:1:0.3 **Storage:** –20°C	**100 µg** **1 mg** **5 mg**
1778 **1778-1** **1778-5**	**Phosphatidylinositol bis-4,5-phosphate, dioctanoyl, (Na^+ salt)** DOPI-4,5-P2; PI-4,5-P2 dioctanoyl (Na^+ salt) $C_{25}H_{44}O_{19}P_3 \bullet 5Na$ **Source:** synthetic **Mol. Wt.:** 856 **Purity:** 98+% by ^{1}H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** water **Storage:** –20°C	**100 µg** **1 mg** **5 mg**
1783 **1783-1** **1783-5**	**Phosphatidylinositol tris-3,4,5-phosphate, dipalmitoyl, (NH_4^+ salt)** DPPI-3,4,5-P3; PI-3,4,5-P3 dipalmitoyl (NH_4^+ salt) $C_{41}H_{75}O_{22}P_4 \bullet 7NH_4$ **Source:** synthetic **Mol. Wt.:** 1170 **Purity:** 98+% by ^{1}H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** chloroform/methanol/water 1:1:0.3 **Storage:** –20°C	**100 µg** **1 mg** **5 mg**
1775 **1775-1** **1775-5**	**Phosphatidylinositol tris-3,4,5-phosphate, dipalmitoyl, (Na^+ salt)** DPPI-3,4,5-P3; PI-3,4,5-P3 dipalmitoyl (Na^+ salt) $C_{41}H_{75}O_{22}P_4 \bullet 7Na$ **Source:** synthetic **Mol. Wt.:** 1205 **Purity:** 98+% by ^{1}H NMR, ^{31}P NMR **Appearance:** solid **Solubility:** water **Storage:** –20°C **References:** 55,56,88,89,90,91	**100 µg** **1 mg** **5 mg**

Bacterial Tetraethers

1303	**Main phospholipid (MPL) of *Thermoplasma acidophilum*, (>95% pure)** Purified MPL of *Thermoplasma acidophilum* (>95% pure) $C_{95}H_{188}O_{16}P$ **Source:** natural, Archaebacteria **Mol. Wt.:** 1618 **Purity:** >95% by TLC, HPLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, hexane/2-propanol/DI water 30:40:5 **Storage:** 4-8°C **References:** 57,58,59,60	**5 mg**
1303-2	**Main phospholipid (MPL) of *Thermoplasma acidophilum*, (>50% pure)** MPL of *Thermoplasma acidophilum* (>50% pure) $C_{95}H_{188}O_{16}P$ **Source:** natural, Archaebacteria **Mol. Wt.:** 1618 **Purity:** >50% by TLC **Appearance:** liquid **Solubility:** chloroform/methanol 2:1, hexane/2-propanol/DI water 30:40:5 **Storage:** 4–8°C highly hygroscopic **References:** 57,58,59,60	**50 mg**

Glycosyl Glycerides



Catalog number 1058

1058 **Monogalactosyldiglyceride** **10 mg**
MGDG (hydrogenated) $C_{45}H_{86}O_{10}$ **CAS#:** 41670-62-6

Source: natural, plant **Mol. Wt.:** 787 (stearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 4:1:0.1 **Storage:** –20°C
References: 61,62,63

1059 **Digalactosyldiglyceride** **5 mg**
DGDG (hydrogenated) $C_{51}H_{96}O_{15}$ **CAS#:** 92457-02-8

Source: natural, plant **Mol. Wt.:** 949 (distearoyl) **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 4:1:0.1 **Storage:** –20°C
Refrences: 151,152,153

Fatty Acids

Simple Fatty Acids

Saturated Fatty Acids and Methyl Esters

These products are 99% pure by GC. They are stable at room temperature and are supplied neat.

1200 **Methyl hexanoate** **1 g**
Methyl caproate; C6:0 methyl ester $C_7H_{14}O_2$ **CAS#:** 106-70-7

Source: natural, plant **Mol. Wt.:** 130 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** room temperature

1196 **Heptanoic acid** **1 g**
C7:0 fatty acid $C_7H_{14}O_2$ **CAS#:** 111-14-8

Source: natural, plant **Mol. Wt.:** 130 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** room temperature

1197 **Methyl heptanoate** **1 g**
C7:0 fatty acid methyl ester $C_8H_{16}O_2$ **CAS#:** 106-73-0

Source: natural, plant **Mol. Wt.:** 144 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** room temperature

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1198	**Octanoic acid** Caprylic acid; C8:0 acid $C_8H_{16}O_2$ **CAS#:** 124-07-2 **Source:** natural, plant **Mol. Wt.:** 144 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1199	**Methyl octanoate** Methyl caprylate; C8:0 methyl ester $C_9H_{18}O_2$ **CAS#:** 111-11-5 **Source:** natural, plant **Mol. Wt.:** 158 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1163	**Nonanoic acid** C9:0 fatty acid; pelargonic acid $C_9H_{18}O_2$ **CAS#:** 112-05-0 **Source:** synthetic **Mol. Wt.:** 158 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1164	**Methyl nonanoate** C9:0 methyl ester $C_{10}H_{20}O_2$ **CAS#:** 1731-84-6 **Source:** synthetic **Mol. Wt.:** 172 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1261	**Methyl decanoate** Methyl caprate; C10:0 methyl ester $C_{11}H_{22}O_2$ **CAS#:** 110-42-9 **Source:** natural, plant **Mol. Wt.:** 186 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane **Storage:** room temperature	**500 mg**
1165	**Undecanoic acid** C11:0 fatty acid $C_{11}H_{22}O_2$ **CAS#:** 112-37-8 **Source:** synthetic **Mol. Wt.:** 186 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1166	**Methyl undecanoate** C11:0 methyl ester $C_{12}H_{24}O_2$ **CAS#:** 1731-86-8 **Source:** synthetic **Mol. Wt.:** 200 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1008	**Dodecanoic acid** Lauric acid; C12:0 acid $C_{12}H_{24}O_2$ **CAS#:** 143-07-7 **Source:** natural, plant **Mol. Wt.:** 200 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1009	**Methyl dodecanoate** Methyl laurate; C12:0 methyl ester $C_{13}H_{26}O_2$ **CAS#:** 111-82-0 **Source:** natural, plant **Mol. Wt.:** 214 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**

1161	**Tridecanoic acid** C13:0 fatty acid $C_{13}H_{26}O_2$ **CAS#:** 638-53-9 **Source:** synthetic **Mol. Wt.:** 214 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1162	**Methyl tridecanoate** C13:0 methyl ester $C_{14}H_{28}O_2$ **CAS#:** 1731-88-0 **Source:** synthetic **Mol. Wt.:** 228 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**100 mg**
1010	**Tetradecanoic acid** Myristic acid; C14:0 acid $C_{14}H_{28}O_2$ **CAS#:** 544-63-8 **Source:** natural, plant **Mol. Wt.:** 228 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1011	**Methyl tetradecanoate** Methyl myristate; C14:0 methyl ester $C_{15}H_{30}O_2$ **CAS#:** 124-10-7 **Source:** natural, plant **Mol. Wt.:** 242 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1012	**Pentadecanoic acid** C15:0 fatty acid $C_{15}H_{30}O_2$ **CAS#:** 1002-84-2 **Source:** synthetic **Mol. Wt.:** 242 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1013	**Methyl pentadecanoate** C15:0 methyl ester $C_{16}H_{32}O_2$ **CAS#:** 7132-64-1 **Source:** synthetic **Mol. Wt.:** 256 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1014	**Hexadecanoic acid** Palmitic acid; C16:0 fatty acid $C_{16}H_{32}O_2$ **CAS#:** 57-10-3 **Source:** natural, plant **Mol. Wt.:** 256 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**
1015	**Methyl hexadecanoate** Methyl palmitate; C16:0 methyl ester $C_{17}H_{34}O_2$ **CAS#:** 112-39-0 **Source:** natural, plant **Mol. Wt.:** 270 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** room temperature	**1 g**

1018 **Heptadecanoic acid** **1 g**
Margaric acid; C17:0 fatty acid $C_{17}H_{34}O_2$ **CAS#:** 506-12-7

Source: synthetic **Mol. Wt.:** 270 **Purity:** 99% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, ethyl ether **Storage:** room temperature

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1019 **Methyl heptadecanoate** **1 g**
Methyl margarate; C17:0 methyl ester $C_{18}H_{36}O_2$ **CAS#:** 1731-92-6

Source: synthetic **Mol. Wt.:** 284 **Purity:** 99% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethanol, ethyl ether **Storage:** room temperature

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1020 **Octadecanoic acid** **1 g**
Stearic acid; C18:0 fatty acid $C_{18}H_{36}O_2$ **CAS#:** 57-11-4

Source: natural, plant **Mol. Wt.:** 284 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethanol, ethyl ether
Storage: room temperature

1021 **Methyl octadecanoate** **1 g**
Methyl stearate; C18:0 methyl ester $C_{19}H_{38}O_2$ **CAS#:** 112-61-8

Source: natural, plant **Mol. Wt.:** 298 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethanol, ethyl ether
Storage: room temperature

1028 **Nonadecanoic acid** **100 mg**
C19:0 fatty acid $C_{19}H_{38}O_2$ **CAS#:** 646-30-0

Source: synthetic **Mol. Wt.:** 298 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature

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1029 **Methyl nonadecanoate** **100 mg**
C19:0 methyl ester $C_{20}H_{40}O_2$ **CAS#:** 1731-94-8

Source: synthetic **Mol. Wt.:** 312 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature

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1030 **Eicosanoic acid** **500 mg**
Arachidic acid; C20:0 fatty acid $C_{20}H_{40}O_2$ **CAS#:** 506-30-9

Source: natural, plant **Mol. Wt.:** 312 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature

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1031 **Methyl eicosanoate** **500 mg**
Methyl arachidate; C20:0 methyl ester $C_{21}H_{42}O_2$ **CAS#:** 1120-28-1

Source: natural, plant **Mol. Wt.:** 326 **Purity:** 99% by TLC, GC
Appearance: solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature

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1241 **Heneicosanoic acid** **100 mg**
C21:0 fatty acid $C_{21}H_{42}O_2$ **CAS#:** 2363-71-5

Source: synthetic **Mol. Wt.:** 326 **Purity:** 99% by TLC, GC **Appearance:** solid
Solubility: chloroform, ethyl ether **Storage:** room temperature

1242	**Methyl heneicosanoate** C21:0 methyl ester $C_{22}H_{44}O_2$ **CAS#:** 6064-90-0 **Source:** synthetic **Mol. Wt.:** 341 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**100 mg**
1035	**Docosanoic acid** Behenic acid; C22:0 fatty acid $C_{22}H_{44}O_2$ **CAS#:** 112-85-6 **Source:** natural, plant **Mol. Wt.:** 341 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**500 mg**
1036	**Methyl docosanoate** Methyl behenate; C22:0 methyl ester $C_{23}H_{46}O_2$ **CAS#:** 929-77-1 **Source:** natural, plant **Mol. Wt.:** 354 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**500 mg**
1186	**Tricosanoic acid** C23:0 fatty acid $C_{23}H_{46}O_2$ **CAS#:** 2433-96-7 **Source:** synthetic **Mol. Wt.:** 355 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**100 mg**
1187	**Methyl tricosanoate** C23:0 methyl ester $C_{24}H_{48}O_2$ **CAS#:** 2433-97-8 **Source:** synthetic **Mol. Wt.:** 368 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**100 mg**
1037	**Tetracosanoic acid** Lignoceric acid; C24:0 fatty acid $C_{24}H_{48}O_2$ **CAS#:** 557-59-5 **Source:** synthetic **Mol. Wt.:** 369 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**100 mg**
1038	**Methyl tetracosanoate** Methyl lignocerate; C24:0 methyl ester $C_{25}H_{50}O_2$ **CAS#:** 2442-49-1 **Source:** synthetic **Mol. Wt.:** 382 **Purity:** 99% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**100 mg**
1251	**Hexacosanoic acid** Cerotic acid; C26:0 acid $C_{26}H_{52}O_2$ **CAS#:** 506-46-7 **Source:** synthetic **Mol. Wt.:** 370 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**25 mg**
1252	**Methyl hexacosanoate** Methyl cerotate; C26:0 methyl ester $C_{27}H_{54}O_2$ **CAS#:** 5802-82-4 **Source:** synthetic **Mol. Wt.:** 411 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** room temperature	**25 mg**

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Unsaturated Fatty Acids and Methyl Esters

Unsaturated fatty acids are easily oxidized. Flush open containers with argon or nitrogen and store at -20°C, in dark.

1157 **Myristoleic acid** **100 mg**
C14:1 (cis-9) fatty acid $C_{14}H_{26}O_2$ **CAS#:** 544-64-9

Source: natural, plant **Mol. Wt.:** 226 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1040 **Methyl cis-9-tetradecenoate** **100 mg**
Methyl myristoleate; C14:1 (cis-9) methyl ester $C_{15}H_{28}O_2$ **CAS#:** 56219-06-8

Source: natural, plant **Mol. Wt.:** 240 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1243 **cis-6-Hexadecenoic acid** **25 mg**
Sapienic acid $C_{16}H_{30}O_2$

Source: synthetic **Mol. Wt.:** 254 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** ethanol, methanol, chloroform, ethyl ether
Storage: –20°C

1016 **Palmitoleic acid** **100 mg**
C16:1 (cis-9) fatty acid $C_{16}H_{30}O_2$ **CAS#:** 373-49-9

Source: natural, plant **Mol. Wt.:** 254 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1017 **Methyl cis-9 hexadecenoate, C16:1 (cis-9)** **100 mg**
Methyl palmitoleate, C16:1 (cis-9) methyl ester $C_{17}H_{32}O_2$ **CAS#:** 1120-25-8

Source: natural, plant **Mol. Wt.:** 268 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1147 **Palmitelaidic acid** **100 mg**
C16:1 (trans-9) acid $C_{16}H_{30}O_2$ **CAS#:** 10030-73-6

Source: synthetic **Mol. Wt.:** 254 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1148 **Methyl palmitelaidate** **100 mg**
C16:1 (trans-9) methyl ester $C_{17}H_{32}O_2$ **CAS#:** 10030-74-7

Source: synthetic **Mol. Wt.:** 268 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1208	**11-Hexadecenoic acid, (92% cis, 8% trans)** C16:1 (cis-11) acid $C_{16}H_{30}O_2$ **Source:** synthetic **Mol. Wt.:** 254 **Purity:** >98%, by TLC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C 92% cis, 8% trans by GC	**50 mg**
1204	**Heptadecenoic acid** C17:1 (cis-10) acid $C_{17}H_{32}O_2$ **CAS#:** 29743-97-3 **Source:** synthetic **Mol. Wt.:** 268 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1203	**Methyl cis-10-heptadecenoate** Methyl heptadecenoate; C17:1 (cis-10) methyl ester $C_{18}H_{34}O_2$ **CAS#:** 75190-82-8 **Source:** synthetic **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1022	**Oleic acid** C18:1 (cis-9) acid $C_{18}H_{34}O_2$ **CAS#:** 112-80-1 **Source:** natural, plant **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**1 g**
1023	**Methyl cis-9 octadecenoate, C18:1 (cis-9)** Methyl oleate; C18:1 (cis-9) methyl ester $C_{19}H_{36}O_2$ **CAS#:** 112-62-9 **Source:** natural, plant **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**1 g**
1149	**Elaidic acid** C18:1 (trans-9) acid $C_{18}H_{34}O_2$ **CAS#:** 112-79-8 **Source:** synthetic **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**1 g**
1150	**Methyl trans-9 octadecenoate, C18:1 (trans-9)** Methyl elaidate; C18:1 (trans-9) methyl ester $C_{19}H_{36}O_2$ **CAS#:** 1937-62-8 **Source:** natural, plant **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**1 g**
1262	**trans 11-Octadecenoic acid** C18:1 (trans-11) acid; trans vaccenic acid $C_{18}H_{34}O_2$ **CAS#:** 693-72-1 **Source:** synthetic **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**

1263	**Methyl trans 11-octadecenoate** Methyl trans vaccenate; C18:1 (trans-11) methyl ester $C_{19}H_{36}O_2$ **CAS#:** 6198-58-9 **Source:** synthetic **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1024	**Linoleic acid** C18:2 (cis,cis-9,12) acid $C_{18}H_{32}O_2$ **CAS#:** 60-33-3 **Source:** natural, plant **Mol. Wt.:** 280 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** ethyl ether, ethanol, hexane **Storage:** –20°C	**1 g**
1025	**Methyl cis 9,12-octadecadienoate, C18:2 (all cis 9,12)** Methyl linoleate; C18:2 (all cis 9,12) methyl ester $C_{19}H_{34}O_2$ **CAS#:** 112-63-0 **Source:** natural, plant **Mol. Wt.:** 294 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**1 g**
1151	**Linoelaidic acid** C18:2 (trans, trans-9, 12) acid $C_{18}H_{32}O_2$ **CAS#:** 506-21-8 **Source:** natural, plant **Mol. Wt.:** 280 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1152	**Methyl trans-9,12-octadecadienoate** Methyl linoelaidate; C18:2 (trans, trans-9,12) methyl ester $C_{19}H_{34}O_2$ **CAS#:** 2566-97-4 **Source:** natural, plant **Mol. Wt.:** 294 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1266	**cis-11-Octadecenoic acid** cis-vaccenic acid; C18:1(cis-11) acid $C_{18}H_{34}O_2$ **CAS#:** 506-17-2 **Source:** natural, plant **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1267	**Methyl cis-11-octadecenoate** Methyl cis-vaccenate; C18:1(cis-11) methyl ester $C_{19}H_{36}O_2$ **CAS#:** 1937-63-9 **Source:** semi-synthetic, plant **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1026	**Linolenic acid** C18:3 (all cis-9,12,15) acid $C_{18}H_{30}O_2$ **CAS#:** 463-40-1 **Source:** natural, plant **Mol. Wt.:** 278 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**500 mg**

1027	**Methyl cis-9,12,15-octadecatrienoate** Methyl linolenate; C18:3 (all cis-9,12,15) methyl ester $C_{19}H_{32}O_2$ **CAS#:** 301-00-8 **Source:** natural, plant **Mol. Wt.:** 292 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**500 mg**
1153	**gamma-Linolenic acid** C18:3 (all cis-6,9,12) acid $C_{18}H_{30}O_2$ **CAS#:** 506-26-3 **Source:** natural, plant **Mol. Wt.:** 278 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1154	**Methyl cis-6,9,12-octadecatrienoate** Methyl gamma-linolenate; C18:3 (all cis-6,9,12) methyl ester $C_{19}H_{32}O_2$ **CAS#:** 16326-32-2 **Source:** natural, plant **Mol. Wt.:** 292 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1205	**Nonadecenoic acid** C19:1 (cis-10) acid $C_{19}H_{36}O_2$ **CAS#:** 73033-09-7 **Source:** synthetic **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1206	**Methyl nonadecenoate** C19:1 (cis-10) methyl ester $C_{20}H_{38}O_2$ **CAS#:** 19788-74-0 **Source:** synthetic **Mol. Wt.:** 310 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1032	**Eicosenoic acid** C20:1 (cis-11) acid $C_{20}H_{38}O_2$ **CAS#:** 5561-99-9 **Source:** natural, plant **Mol. Wt.:** 310 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1033	**Methyl cis-11 eicosenoate** Methyl eicosenoate; C20:1 (cis-11) methyl ester $C_{21}H_{40}O_2$ **CAS#:** 2390-09-2 **Source:** natural, plant **Mol. Wt.:** 324 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1192	**Eicosadienoic acid** C20:2 (cis, cis-11, 14) acid $C_{20}H_{36}O_2$ **CAS#:** 2091-39-6 **Source:** synthetic **Mol. Wt.:** 309 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**

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1193 **Methyl cis-11,14-eicosadienoate** **100 mg**
Methyl eicosadienoate; C20:2 (cis, cis-11, 14) methyl ester $C_{21}H_{38}O_2$
CAS#: 2463-02-7

Source: synthetic **Mol. Wt.:** 322 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1179 **Methyl 5,8,11-eicosatrienoate** **1 mg/ml, 1 ml**
C20:3 (all cis-5,8,11) methyl ester; mead acid methyl ester $C_{21}H_{36}O_2$
CAS#: 14602-39-2

Source: natural, plant **Mol. Wt.:** 320 **Purity:** 90% by TLC, GC
Appearance: liquid **Solvent:** hexane **Solubility:** chloroform, hexane, ethyl ether
Storage: –20°C

1269 **Methyl 8,11,14-eicosatrienoate** **50 mg**
Methyl homogamma linolenate, C20:3n6 $C_{21}H_{36}O_2$

Source: semi-synthetic, plant **Mol. Wt.:** 321 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** hexane, ethyl ether, chloroform **Storage:** –20°C

1042 **Arachidonic acid** **100 mg**
C20:4 (all cis-5,8,11,14) acid $C_{20}H_{32}O_2$ **CAS#:** 506-32-1

Source: natural, plant **Mol. Wt.:** 304 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** ethyl ether, hexane, methylene chloride
Storage: –20°C
Dry Ice Charge Applies

1034 **Methyl cis-5,8,11,14-eicosatetraenoate** **100 mg**
Methyl arachidonate; C20:4 (all cis-5,8,11,14) methyl ester $C_{21}H_{34}O_2$
CAS#: 2566-89-4

Source: natural, plant **Mol. Wt.:** 318 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C
Dry Ice Charge Applies

1167 **Eicosapentaenoic acid** **25 mg**
EPA ; omega-3 fatty acid; C20:5 (all cis-5,8,11,14,17) acid $C_{20}H_{30}O_2$
CAS#: 10417-94-4

Source: natural, fish oil **Mol. Wt.:** 302 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether, ethanol, DMSO, DMF **Storage:** –20°C **Dry Ice Charge Applies**

Anti-hyperlipoproteinenic agent; 5-LOX inhibitor

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25 mg

1194 **Methyl eicosapentaenoate**
Methyl ester of omega-3 fatty acid; C20:5 (all cis-5,8,11,14,17) methyl ester
$C_{21}H_{32}O_2$ **CAS#:** 2734-47-6

Source: natural, fish oil **Mol. Wt.:** 316 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C
References: 170,171,172 **Dry Ice Charge Applies**

1264	**Docosenoic acid** C22:1 (cis-13), erucic acid $C_{22}H_{42}O_2$ **CAS#:** 112-86-7 **Source:** natural, plant **Mol. Wt.:** 339 **Purity:** >99% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C	**100 mg**
1265	**Methyl docosenoate** C22:1 (cis-13) methyl ester; methyl erucate $C_{23}H_{44}O_2$ **CAS#:** 1120-34-9 **Source:** natural, plant **Mol. Wt.:** 352 **Purity:** >99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C	**100 mg**
1175	**Docosapentaenoic acid** C22:5 (all cis-7,10,13,16,19) acid $C_{22}H_{34}O_2$ **CAS#:** 24880-45-3 **Source:** semi-synthetic **Mol. Wt.:** 330 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C **Dry Ice Charge Applies**	**25 mg**
1244	**Methyl docosapentaenoate** C22:5 (all cis-7,10,13,16,19) methyl ester $C_{23}H_{36}O_2$ **CAS#:** 108698-02-8 **Source:** semi-synthetic **Mol. Wt.:** 344 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** ethyl ether, ethanol, hexane, **Storage:** –20°C **Dry Ice Charge Applies**	**25 mg**
1136	**Docosahexaenoic acid** DHA; C22:6, (all cis-4,7,10,13,16,19) omega-3 fatty acid $C_{22}H_{32}O_2$ **CAS#:** 6217-54-5 **Source:** natural, plant **Mol. Wt.:** 328 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** ethyl ether, hexane, methylene chloride, ethanol, DMSO, DMF **Storage:** –20°C **Dry Ice Charge Applies**	**100 mg**
1041	**Methyl docosahexaenoate** C22:6 (all cis-4,7,10,13,16,19) methyl ester; methyl ester of omega-3 fatty acid $C_{23}H_{34}O_2$ **CAS#:** 2566-90-7 **Source:** natural, plant **Mol. Wt.:** 342 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C **Dry Ice Charge Applies**	**100 mg**
1155	**Nervonic acid** C24:1 (cis-15) acid $C_{24}H_{46}O_2$ **CAS#:** 506-37-6 **Source:** synthetic **Mol. Wt.:** 367 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**
1156	**Methyl cis-15-tetracosenoate** Methyl nervonate; C24:1 (cis-15) methyl ester $C_{25}H_{48}O_2$ **CAS#:** 2733-88-2 **Source:** synthetic **Mol. Wt.:** 381 **Purity:** 99% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C	**100 mg**

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Trans Fatty Acids and Methyl Esters

1147 **Palmitelaidic acid** **100 mg**
C16:1 (trans-9) acid $C_{16}H_{30}O_2$ **CAS#:** 10030-73-6

Source: synthetic **Mol. Wt.:** 254 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1148 **Methyl palmitelaidate** **100 mg**
C16:1 (trans-9) methyl ester $C_{17}H_{32}O_2$ **CAS#:** 10030-74-7

Source: synthetic **Mol. Wt.:** 268 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1149 **Elaidic acid** **1 g**
C18:1 (trans-9) acid $C_{18}H_{34}O_2$ **CAS#:** 112-79-8

Source: synthetic **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** solid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1150 **Methyl elaidate** **1 g**
C18:1 (trans-9) methyl ester $C_{19}H_{36}O_2$ **CAS#:** 1937-62-8

Source: natural, plant **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1262 **trans 11-Octadecenoic acid** **100 mg**
C18:1 (trans-11) acid; trans vaccenic acid $C_{18}H_{34}O_2$ **CAS#:** 693-72-1

Source: synthetic **Mol. Wt.:** 282 **Purity:** 99% by TLC, GC **Appearance:** solid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1263 **Methyl trans 11-octadecenoate** **100 mg**
Methyl trans vaccenate; C18:1 (trans-11) methyl ester $C_{19}H_{36}O_2$
CAS#: 6198-58-9

Source: synthetic **Mol. Wt.:** 296 **Purity:** 99% by TLC, GC **Appearance:** liquid
Solubility: chloroform, hexane, ethyl ether **Storage:** –20°C

1151 **Linoelaidic acid** **100 mg**
C18:2 (trans, trans-9, 12) acid $C_{18}H_{32}O_2$ **CAS#:** 506-21-8

Source: natural, plant **Mol. Wt.:** 280 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1152 **Methyl linoelaidate** **100 mg**
C18:2 (trans, trans-9,12) methyl ester $C_{19}H_{34}O_2$ **CAS#:** 2566-97-4

Source: natural, plant **Mol. Wt.:** 294 **Purity:** 99% by TLC, GC
Appearance: liquid **Solubility:** chloroform, hexane, ethyl ether **Storage:** –20°C

1131 **Cis-trans isomer standard** **5 mg/ml, 5 ml**
Qualitative mix

Source: margarine **Appearance:** liquid **Solvent:** 5ml methylene chloride
Solubility: methylene chloride, chloroform **Storage:** –20°C **References:** 148,150

Analysis of positional cis-trans fatty acid isomers is ever more important in light of the new food industry rules. These isomers can be resolved on Supelco SP-2560 or an equivalent capillary GC column. Use this specially formulated mix to ensure proper operation of your column for this tricky separation. Mix consists of cis-trans fatty acid isomers as methyl esters in methylene chloride.

This is a qualitative standard containing in order of elution: C16:0, C18:0, C18:1 trans isomers (4 peaks), C18:1 cis & trans isomers (2 peaks), C18:1 cis isomers (4 peaks), C18:2, C20:0, C20:1 and C18:3 (same peak), C22:0

1181 **9(E),11(E)-Octadecadienoic acid** **25 mg**
9-trans, 11-trans CLA $C_{18}H_{32}O_2$ **CAS#:** 544-71-8

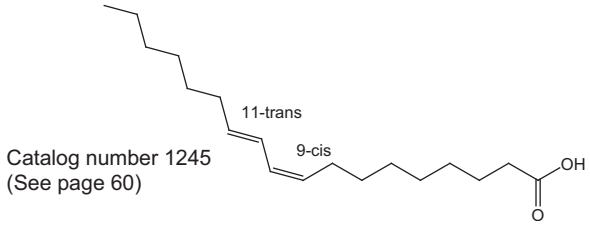
Source: synthetic **Mol. Wt.:** 280 **Melting Point (°C):** 55-57 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, hexane, methanol
Storage: –20°C

Conjugated Linoleic Acid Isomers (CLA)

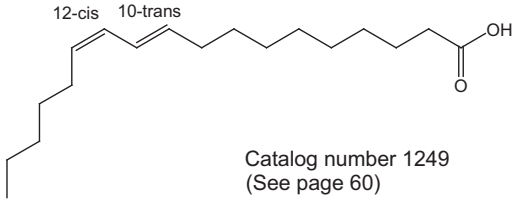
Linoleic acid is an essential fatty acid (18:2 ω6) of which several naturally occurring conjugated derivatives have been identified. These derivatives, called "conjugated linoleic acid" or CLA can have the two double bonds mainly in the 9 and 11 or in the 10 and 12 positions, resulting in eight possible geometric isomers. CLA occurs in meat (225) and dairy products (226,227). In both cases, the 9(Z),11(E)-isomer is predominant and is thought to be the biologically active form. CLA assimilated through the diet of animals is found in the intestinal musosa, liver and adipose tissue (228). See also review article by Parodi (227). CLA has several biological properties. It's anti-carcinogenic activity has been demonstrated by its ability to inhibit chemically induced tumor formation in animal models of carcinogenesis (225,229,230,231). The addition of CLA to culture medium suppresses the *in vitro* growth of human melanoma, colorectal and breast cancer cells (232). CLA also exhibits anti-atherogenic activity. Addition of CLA to a controlled atherogenic diet significantly reduced the development of atherosclerosis in hamsters and rabbits (233,234). Animals fed a diet containing CLA also had lower levels of low-density-lipoprotein (LDL) cholesterol. CLA may be involved in regulating fat and protein metabolism (235,236). Several species of animals fed CLA-supplemented diets showed improved feed efficiency. Lean body mass increased while body fat was reduced. This seems to be due, mainly or exclusively, to the 10(E),12(Z)-isomer (catalog # 1249, see below). CLA competes with linoleate for Δ6 desaturase (237). Dietary CLA normalizes impaired glucose tolerance in the Zucker diabetic fatty *fa/fa* rat (241) *via* activation of PPAR γ, a result which bears on the possible ameliorization or prevention of NIDDM. The 11(Z),13(E)-isomer (catalog # 1259) has been shown to be concentrated in the heart and in mitochondria.
See Literature References on page 99.

CLA Research is Being Redone With Our Highly Pure Isomers

Most studies to date have utilized a mixture of CLA isomers containing less than 30% of the presumed active 9(Z),11(E)-isomer (238,239). In addition to the 9,11- and 10,12-isomers, 8,10- and 11,13-isomers have recently been identified in the widely used mixture (239,240). Matreya offers a highly pure CLA which is 98+% the active 9,11-"cis, trans" isomer. The corresponding "trans,trans" and "cis,cis" isomers are also available. In addition, we now offer the pure 10(E),12(Z)-isomer, which has been widely sought for comparison studies.
See Literature References on page 99.



Catalog number 1245
(See page 60)



Catalog number 1249
(See page 60)

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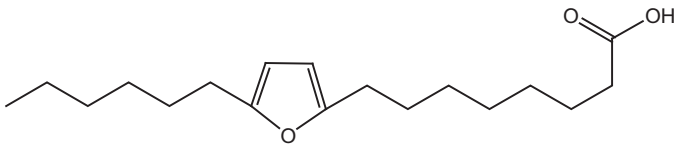
1245 **1245-1** **1245-10**	**9(Z),11(E)-Octadecadienoic acid** 9-cis, 11-trans CLA $C_{18}H_{32}O_2$ **CAS#:** 2540-56-9 **Source:** synthetic **Mol. Wt.:** 280 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol, DMSO **Storage:** –20°C **References:** 67,68,69,70	**25 mg** **1 g** **10 g**
1255	**Methyl 9(Z), 11(E)-octadecadienoate** Methyl ester of CLA (9-cis, 11-trans) $C_{19}H_{34}O_2$ **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:** 67,68,69,70	**25 mg**
1181	**9(E),11(E)-Octadecadienoic acid** 9-trans, 11-trans CLA $C_{18}H_{32}O_2$ **CAS#:** 544-71-8 **Source:** synthetic **Mol. Wt.:** 280 **Melting Point (°C):** 55-57 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:** 67,182,183	**25 mg**
1257	**Methyl 9(E),11(E)-octadecadienoate** Methyl ester of CLA (9-trans, 11-trans) $C_{19}H_{34}O_2$ **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C	**25 mg**
1248 **1248-1**	**9(Z),11(Z)-Octadecadienoic acid** 9-cis, 11-cis CLA $C_{18}H_{32}O_2$ **CAS#:** 544-40-7 **Source:** synthetic **Mol. Wt.:** 280 **Melting Point (°C):** 40-42 **Purity:** 96+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, ethyl ether **Storage:** –20°C **References:** 67,166	**25 mg** **1 g**
1256	**Methyl 9(Z), 11(Z)-octadecadienoate** Methyl ester of CLA (9-cis, 11-cis) $C_{19}H_{34}O_2$ **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 96+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C	**25 mg**
1249 **1249-1** **1249-10**	**10(E),12(Z)-Octadecadienoic acid** 10-trans, 12-cis CLA $C_{18}H_{32}O_2$ **CAS#:** 2420-44-2 **Source:** synthetic **Mol. Wt.:** 280 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:**	**25 mg** **1 g** **10 g**
1254	**Methyl 10(E), 12(Z)-octadecadienoate** Methyl ester of CLA (10-trans, 12-cis) $C_{19}H_{34}O_2$ **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:** 67,167,168,169	**25 mg**

1259	**11(Z), 13(E)-Octadecadienoic acid** 11-cis, 13-trans CLA $C_{18}H_{32}O_2$ **Source:** synthetic **Mol. Wt.:** 280 **Purity:** 77% cis, trans; 2 % cis, cis; 6% trans, trans by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C	**5 mg**
1247-1 **1247-10**	**9(Z),11(E)-Octadecadienoic acid** 9-cis, 11-trans CLA $C_{18}H_{32}O_2$ **CAS#:** 2540-56-9 **Source:** synthetic **Mol. Wt.:** 280 **Purity:** 74% 9(Z),11(E); 17%(Z),(Z); 1%(E),(E) by TLC, GC **Appearance:** liquid **Solubility:** ethanol, ethyl ether, hexane **Storage:** –20°C	**1 g** **10 g**
1258	**Methyl 9(Z),11(E)-octadecadienoate** Methyl ester of CLA (9-cis, 11-trans) $C_{19}H_{34}O_2$ **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 74% 9(Z),11(E); 17%(Z),(Z); 1% (E),(E) by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C	**25 mg**

Other CLA Products and Derivatives



Catalog number 1793

1793	**8-(5-Hexyl-2-furyl)-octanoic acid** Furan fatty acid; 9,12-epoxy-9,11-octadecadienoic acid $C_{18}H_{30}O_3$ **CAS#:** 4179-44-6 **Source:** synthetic **Mol. Wt.:** 294 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** –20°C	**25 mg**
1409	**1-Stearoyl-2-linoleoyl-sn-glycero-3-phosphorylcholine** $C_{44}H_{84}NO_8P$ **Source:** synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C	**25 mg/ml, 1ml**
1410	**1-Stearoyl-2-[9(Z),11(E)-octadecadienoyl]-sn-glycero-3-phosphorylcholine** $C_{44}H_{84}NO_8P$ **Source:** synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C	**25 mg/ml, 1ml**

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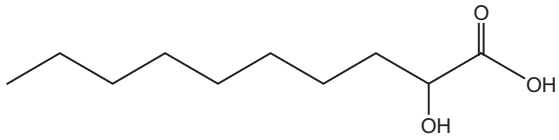
1411	**1-Stearoyl-2-[10(E),12(Z)-octadecadienoyl]-sn-glycero-3-phosphorylcholine** $C_{44}H_{84}NO_8P$ **Source:** synthetic **Mol. Wt.:** 786 **Purity:** 98+% by TLC **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform, ethanol **Storage:** –20°C	**25 mg/ml, 1ml**
1794	**Methyl 8-(5-hexyl-2-furyl)-octanoate** Methyl ester of furan fatty acid $C_{19}H_{32}O_3$ **CAS#:** 10038-16-1 **Source:** synthetic **Mol. Wt.:** 308 **Purity:** 98+% by TLC, GC **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** –20°C	**25 mg**

Hydroxy Fatty Acids

2-Hydroxy Fatty Acids and Methyl Esters

These products are racemic and 98+% pure by GC and TLC. The 2-hydroxy fatty acids are components of glycosphingolipids and are involved in fatty acid degradation. They are stable and are supplied neat in vials.



Catalog number 1758

1758 **1758-1**	**2-Hydroxydecanoic acid** 2-Hydroxy C10:0 acid $C_{10}H_{20}O_3$ **CAS#:** 5393-81-7 **Source:** synthetic **Mol. Wt.:** 188 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, methanol **Storage:** –20°C	**50 mg** **1 g**
1759 **1759-1**	**Methyl 2-hydroxydecanoate** 2-Hydroxy C10:0 methyl ester $C_{11}H_{22}O_3$ **CAS#:** 71271-24-4 **Source:** synthetic **Mol. Wt.:** 202 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, methanol **Storage:** –20°C	**50 mg** **1 g**
1701 **1701-1**	**2-Hydroxydodecanoic acid** 2-Hydroxy C12:0 acid $C_{12}H_{24}O_3$ **CAS#:** 2984-55-6 **Source:** synthetic **Mol. Wt.:** 216 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, methanol **Storage:** –20°C	**50 mg** **1 g**
1702 **1702-1**	**Methyl 2-hydroxydodecanoate** 2-Hydroxy C12:0 methyl ester $C_{13}H_{26}O_3$ **CAS#:** 51067-85-7 **Source:** synthetic **Mol. Wt.:** 230 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, methanol **Storage:** –20°C	**50 mg** **1 g**

1703	**2-Hydroxytetradecanoic acid**	**50 mg**
1703-1	2-Hydroxy C14:0 acid $C_{14}H_{28}O_3$ **CAS#:** 2507-55-3	**1 g**

Source: synthetic **Mol. Wt.:** 244 **Melting Point (°C):** 81-82 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, methanol **Storage:** –20°C

1704	**Methyl 2-hydroxytetradecanoate**	**50 mg**
1704-1	2-Hydroxy C14:0 methyl ester $C_{15}H_{30}O_3$ **CAS#:** 56009-40-6	**1 g**

Source: synthetic **Mol. Wt.:** 258 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, methanol **Storage:** –20°C

1705	**2-Hydroxyhexadecanoic acid**	**50 mg**
1705-1	2-Hydroxy C16:0 acid $C_{16}H_{32}O_3$ **CAS#:** 764-67-0	**1 g**

Source: synthetic **Mol. Wt.:** 272 **Melting Point (°C):** 86-87 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C

1706	**Methyl 2-hydroxyhexadecanoate**	**50 mg**
1706-1	2-Hydroxy C16:0 methyl ester $C_{17}H_{34}O_3$ **CAS#:** 16742-51-1	**1 g**

Source: synthetic **Mol. Wt.:** 286 **Melting Point (°C):** 59-60 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, methanol **Storage:** –20°C

1707	**2-Hydroxyoctadecanoic acid**	**50 mg**
1707-1	2-Hydroxy C18:0 acid $C_{18}H_{36}O_3$ **CAS#:** 629-22-1	**1 g**

Source: synthetic **Mol. Wt.:** 300 **Melting Point (°C):** 92-93 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

1708	**Methyl 2-hydroxyoctadecanoate**	**50 mg**
1708-1	2-Hydroxy C18:0 methyl ester $C_{19}H_{38}O_3$ **CAS#:** 2420-35-1	**1 g**

Source: synthetic **Mol. Wt.:** 315 **Melting Point (°C):** 64-66 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, methanol **Storage:** –20°C

		25 mg
1709	**2-Hydroxyeicosanoic acid**	**0.5 g**
1709-0.5	2-Hydroxy C20:0 acid $C_{20}H_{40}O_3$ **CAS#:** 16742-48-6	

Source: synthetic **Mol. Wt.:** 329 **Melting Point (°C):** 91-92 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

1710	**Methyl 2-hydroxyeicosanoate**	**25 mg**
1710-0.5	2-Hydroxy C20:0 methyl ester $C_{21}H_{42}O_3$ **CAS#:** 16742-49-7	**0.5 g**

Source: synthetic **Mol. Wt.:** 343 **Melting Point (°C):** 62-64 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** –20°C

1711	**2-Hydroxydocosanoic acid**	**25 mg**
1711-0.5	2-Hydroxy C22:0 acid $C_{22}H_{44}O_3$ **CAS#:** 13980-14-8	**0.5 g**

Source: synthetic **Mol. Wt.:** 366 **Melting Point (°C):** 96-97 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

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1712 **1712-0.5**	**Methyl 2-hydroxydocosanoate** 2-Hydroxy C22:0 methyl ester $C_{23}H_{46}O_3$ **CAS#:** 13980-17-1	**25 mg** **0.5 g**

Source: synthetic **Mol. Wt.:** 371 **Melting Point (°C):** 72-73 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** –20°C

1713	**2-Hydroxytricosanoic acid** 2-Hydroxy C23:0 acid $C_{23}H_{46}O_3$ **CAS#:** 2718-37-8	**10 mg**

Source: synthetic **Mol. Wt.:** 371 **Melting Point (°C):** 98-99 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

1714	**Methyl 2-hydroxytricosanoate** 2-Hydroxy C23:0 methyl ester $C_{24}H_{48}O_3$ **CAS#:** 118745-41-8	**10 mg**

Source: synthetic **Mol. Wt.:** 385 **Melting Point (°C):** 68-70 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** –20°C

1715	**2-Hydroxytetracosanoic acid** 2-Hydroxy C24:0 acid; cerebronic acid $C_{24}H_{48}O_3$ **CAS#:** 544-57-0	**5 mg**

Source: synthetic **Mol. Wt.:** 385 **Melting Point (°C):** 101-104 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform/methanol 5:1 **Storage:** –20°C

1716	**Methyl 2-hydroxytetracosanoate** 2-Hydroxy C24:0 methyl ester $C_{25}H_{50}O_3$ **CAS#:** 2433-95-6	**5 mg**

Source: synthetic **Mol. Wt.:** 399 **Melting Point (°C):** 77-80 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether **Storage:** –20°C

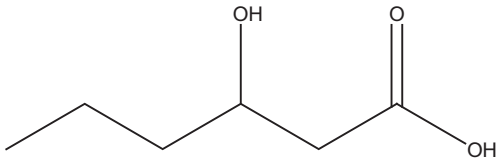
1722	**2-Hydroxy methyl ester mix** Quantitative mixture	**10 mg/ml, 1 ml**

Source: synthetic **Appearance:** liquid **Solvent:** methylene chloride
Solubility: methylene chloride **Storage:** –20°C

Contains: 2-OH C14:0, 20%; 2-OH C16:0, 20%; 2-OH C18:0, 15%; 2-OH C20:0, 15.0%; 2-OH C22:0, 10%; 2-OH C23:0, 10%; 2-OH C24:0, 10%

3-Hydroxy Fatty Acids and Methyl Esters

These products are racemic and 98+% pure by GC and TLC. 3-Hydroxy fatty acids occur in the lipid fraction of many microorganisms and are useful in the typing of microbial isolates. They are stable and are supplied neat in vials.



Catalog number 1747

1747 **3-Hydroxyhexanoic acid** **25 mg**
1747-0.5 3-Hydroxy C6:0 acid $C_6H_{12}O_3$ **CAS#:** 10191-24-9 **0.5 g**

Source: synthetic **Mol. Wt.:** 132 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1748 **Methyl 3-hydroxyhexanoate** **25 mg**
1748-0.5 3-Hydroxy C6:0 methyl ester $C_7H_{14}O_3$ **CAS#:** 21188-58-9 **0.5 g**

Source: synthetic **Mol. Wt.:** 146 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1745 **3-Hydroxyoctanoic acid** **25 mg**
1745-0.5 3-Hydroxy C8:0 acid $C_8H_{16}O_3$ **CAS#:** 88930-08-9 **0.5 g**

Source: synthetic **Mol. Wt.:** 160 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1746 **Methyl 3-hydroxyoctanoate** **25 mg**
1746-0.5 3-Hydroxy C8:0 methyl ester $C_9H_{18}O_3$ **CAS#:** 85549-54-8 **0.5 g**

Source: synthetic **Mol. Wt.:** 174 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** –20°C

1725 **3-Hydroxynonanoic acid** **25 mg**
1725-0.5 3-Hydroxy C9:0 acid $C_9H_{18}O_3$ **CAS#:** 88930-09-0 **0.5 g**

Source: synthetic **Mol. Wt.:** 174 **Melting Point (°C):** 60-62 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: –20°C

1726 **Methyl 3-hydroxynonanoate** **25 mg**
1726-0.5 3-Hydroxy C9:0 methyl ester $C_{10}H_{20}O_3$ **CAS#:** 83968-06-3 **0.5 g**

Source: synthetic **Mol. Wt.:** 188 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** –20°C

1727 **3-Hydroxydecanoic acid**
1727-0.5 3-Hydroxy C10:0 acid $C_{10}H_{20}O_3$ **CAS#:** 5561-87-5 **25 mg**
0.5 g

Source: synthetic **Mol. Wt.:** 188 **Melting Point (°C):** 57-60 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

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		25 mg
1728	**Methyl 3-hydroxydecanoate**	**0.5 g**
1728-0.5	3-Hydroxy C10:0 methyl ester $C_{11}H_{22}O_3$ **CAS#:** 62675-82-5	

Source: synthetic **Mol. Wt.:** 202 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1729	**3-Hydroxyundecanoic acid**	**25 mg**
1729-0.5	3-Hydroxy C11:0 acid $C_{11}H_{22}O_3$ **CAS#:** 40165-88-6	**0.5 g**

Source: synthetic **Mol. Wt.:** 202 **Melting Point (°C):** 74-76 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1730	**Methyl 3-hydroxyundecanoate**	**25 mg**
1730-0.5	3-Hydroxy C11:0 methyl ester $C_{12}H_{24}O_3$ **CAS#:** 127593-21-9	**0.5 g**

Source: synthetic **Mol. Wt.:** 216 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol **Storage:** –20°C

1731	**3-Hydroxydodecanoic acid**	**25 mg**
1731-0.5	3-Hydroxy C12:0 acid $C_{12}H_{24}O_3$ **CAS#:** 1883-13-2	**0.5 g**

Source: synthetic **Mol. Wt.:** 216 **Melting Point (°C):** 71-72 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

1732	**Methyl 3-hydroxydodecanoate**	**25 mg**
1732-0.5	3-Hydroxy C12:0 methyl ester $C_{13}H_{26}O_3$ **CAS#:** 85464-97-7	**0.5 g**

Source: synthetic **Mol. Wt.:** 230 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, ethyl ether **Storage:** –20°C

1733	**3-Hydroxytridecanoic acid**	**25 mg**
1733-0.5	3-Hydroxy C13:0 acid $C_{13}H_{26}O_3$ **CAS#:** 32602-69-0	**0.5 g**

Source: synthetic **Mol. Wt.:** 230 **Melting Point (°C):** 80-83 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1734	**Methyl 3-hydroxytridecanoate**	**25 mg**
1734-0.5	3-Hydroxy C13:0 methyl ester $C_{14}H_{28}O_3$	**0.5 g**

Source: synthetic **Mol. Wt.:** 244 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethyl ether **Storage:** –20°C

1735	**3-Hydroxytetradecanoic acid**	**25 mg**
1735-0.5	3-Hydroxy C14:0 acid $C_{14}H_{28}O_3$ **CAS#:** 3422-31-9	**0.5 g**

Source: synthetic **Mol. Wt.:** 244 **Melting Point (°C):** 80-81 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1736	**Methyl 3-hydroxytetradecanoate**	**25 mg**
1736-0.5	3-Hydroxy C14:0 methyl ester $C_{15}H_{30}O_3$ **CAS#:** 55682-83-2	**0.5 g**

Source: synthetic **Mol. Wt.:** 258 **Melting Point (°C):** 36-37 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, methanol
Storage: –20°C

1739 **3-Hydroxyhexadecanoic acid** **25 mg**
1739-0.5 3-Hydroxy C16:0 acid $C_{16}H_{32}O_3$. **CAS#:** 928-17-6 **0.5 g**

Source: synthetic **Mol. Wt.:** 272 **Melting Point (°C):** 85-86 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1740 **Methyl 3-hydroxyhexadecanoate** **25 mg**
1740-0.5 3-Hydroxy C16:0 methyl ester $C_{17}H_{34}O_3$ **CAS#:** 51883-36-4 **0.5 g**

Source: synthetic **Mol. Wt.:** 286 **Melting Point (°C):** 43-45 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

1741 **3-Hydroxyheptadecanoic acid** **25 mg**
1741-0.5 3-Hydroxy C17:0 acid $C_{17}H_{34}O_3$ **CAS#:** 40165-89-7 **0.5 g**

Source: synthetic **Mol. Wt.:** 286 **Melting Point (°C):** 93-95 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

1742 **Methyl 3-hydroxyheptadecanoate** **25 mg**
1742-0.5 3-Hydroxy C17:0 methyl ester $C_{18}H_{36}O_3$ **0.5 g**

Source: synthetic **Mol. Wt.:** 300 **Melting Point (°C):** 53-55 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

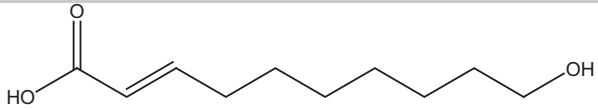
1743 **3-Hydroxyoctadecanoic acid** **25 mg**
1743-0.5 3-Hydroxy C18:0 acid $C_{18}H_{36}O_3$ **CAS#:** 45261-96-9 **0.5 g**

Source: synthetic **Mol. Wt.:** 300 **Melting Point (°C):** 52-54 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

1744 **Methyl 3-hydroxyoctadecanoate** **25 mg**
1744-0.5 3-Hydroxy C18:0 methyl ester $C_{19}H_{38}O_3$ **CAS#:** 14531-40-9 **0.5 g**

Source: synthetic **Mol. Wt.:** 314 **Melting Point (°C):** 52-54 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

Omega Hydroxy Fatty Acids



Catalog number 1754

1754 **Royal Jelly acid** **50 mg**
1754-0.5 10-Hydroxy-2-(E)-decenoic acid; omega-hydroxy C10:1 (2-trans) $C_{10}H_{18}O_3$ **0.5 g**
CAS#: 14113-05-4

Source: synthetic **Mol. Wt.:** 186 **Melting Point (°C):** 63-65 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

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1881 **15-Hydroxypentadecanoic acid** **25 mg**
omega-Hydroxy C15:0 $C_{15}H_{30}O_3$ **CAS#:** 4617-33-8

Source: synthetic **Mol. Wt.:** 258 **Melting Point (°C):** 84-86 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol
Storage: room temperature

1882 **Methyl 15-hydroxypentadecanoate** **25 mg**
omega-Hydroxy C15:0 fatty acid methyl ester $C_{16}H_{32}O_3$
CAS#: 76529-42-5

Source: synthetic **Mol. Wt.:** 272 **Melting Point (°C):** 50-52 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether
Storage: room temperature

1760 **17-Hydroxyheptadecanoic acid** **25 mg**
omega-Hydroxy C17:0 fatty acid $C_{17}H_{34}O_3$ **CAS#:** 13099-34-8

Source: synthetic **Mol. Wt.:** 286 **Melting Point (°C):** 93-95 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether
Storage: room temperature

1761 **Methyl 17-hydroxyheptadecanoate** **25 mg**
omega-Hydroxy C17:0 fatty acid methyl ester $C_{18}H_{36}O_3$
CAS#: 94036-00-7

Source: synthetic **Mol. Wt.:** 300 **Melting Point (°C):** 59-63 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether
Storage: room temperature

1877 **20-Hydroxyeicosanoic acid** **25 mg**
omega-Hydroxy C20:0 fatty acid $C_{20}H_{40}O_3$

Source: synthetic **Mol. Wt.:** 328 **Melting Point (°C):** 96-98 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol
Storage: room temperature

1878 **Methyl 20-hydroxyeicosanoate** **25 mg**
omega-Hydroxy C20:0 fatty acid methyl ester $C_{21}H_{42}O_3$

Source: synthetic **Mol. Wt.:** 342 **Melting Point (°C):** 69-71 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether
Storage: room temperature

1880 **Methyl 21-hydroxyheneicosanoate** **25 mg**
omega-Hydroxy C21:0 fatty acid methyl ester $C_{22}H_{44}O_3$

Source: synthetic **Mol. Wt.:** 356 **Melting Point (°C):** 73-76 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether
Storage: room temperature

1818 **22-Hydroxydocosanoic acid** **25 mg**
omega-hydroxy C22:0 fatty acid $C_{22}H_{44}O_3$

Source: synthetic **Mol. Wt.:** 356 **Melting Point (°C):** 100-102 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol
Storage: room temperature

1819 **Methyl 22-hydroxydocosanoate** **25 mg**
omega-Hydroxy C22:0 fatty acid methyl ester $C_{23}H_{46}O_3$

Source: synthetic **Mol. Wt.:** 370 **Melting Point (°C):** 73-75 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, warm ethanol, ethyl ether **Storage:** room temperature

1883 **Methyl 27-hydroxyheptacosanoate** **25 mg**
omega-Hydroxy C27:0 fatty acid methyl ester $C_{28}H_{56}O_3$

Source: synthetic **Mol. Wt.:** 440 **Melting Point (°C):** 85-89 **Purity:** 97+% by TLC, GC **Appearance:** solid **Solubility:** chloroform **Storage:** room temperature

1884 **Methyl 30-hydroxytriacontanoate** **25 mg**
omega-Hydroxy C30:0 fatty acid methyl ester $C_{31}H_{62}O_3$

Source: synthetic **Mol. Wt.:** 482 **Melting Point (°C):** 88-91 **Purity:** 97+% by TLC, GC **Appearance:** solid **Solubility:** chloroform **Storage:** room temperature

Other Hydroxy Fatty Acids

1182 **Ricinelaidic acid** **100 mg**
12-Hydroxy C18:1 (9-trans) fatty acid $C_{18}H_{34}O_3$ **CAS#:** 82188-83-8

Source: synthetic **Mol. Wt.:** 298 **Melting Point (°C):** 50-53 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

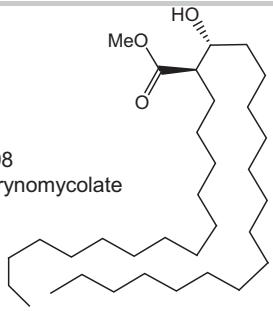
1183 **Methyl ricinelaidate** **100 mg**
12-Hydroxy C18:1 (9-trans) methyl ester $C_{19}H_{36}O_3$ **CAS#:** 7706-01-6

Source: synthetic **Mol. Wt.:** 312 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** –20°C

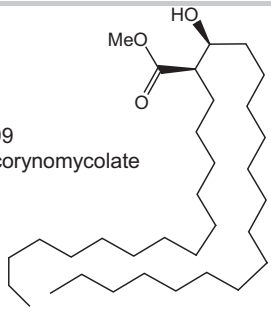
1766 **6-Hydroxyoctadecanoic acid** **10 mg**
6-Hydroxy C18:0 fatty acid $C_{18}H_{36}O_3$

Source: synthetic **Mol. Wt.:** 300 **Melting Point (°C):** 80-82 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** ethanol, methanol **Storage:** room temperature

Catalog number 1898
Methyl D,L-threo-corynomycolate



Catalog number 1899
Methyl D,L-erythro-corynomycolate
(See page 70)



1898 **Methyl D,L-threo-corynomycolate** **25 mg**
Hydroxy fatty acid with long branched chain $C_{33}H_{66}O_3$

Source: synthetic **Mol. Wt.:** 511 **Melting Point (°C):** 70 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform **Storage:** room temperature

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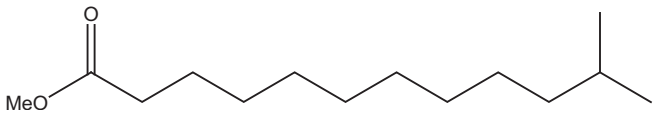
1899	**Methyl D,L-erythro-corynomycolate** Hydroxy fatty acid with long branched chain $C_{33}H_{66}O_3$ **Source:** synthetic **Mol. Wt.:** 511 **Melting Point (°C):** 58 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform **Storage:** room temperature	**25 mg**

Branched and Cyclic Fatty Acids

Iso-Fatty Acids and Esters

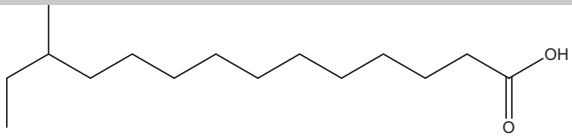


Catalog number 1656

1656	**Methyl 11-methyldodecanoate** iso-Tridecanoic methyl ester; iso C13 methyl ester $C_{14}H_{28}O_2$ **CAS#:** 5129-57-7 **Source:** synthetic **Mol. Wt.:** 228 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** hexane, ethyl ether, methylene chloride **Storage:** –20°C	**20 mg**
1657	**Methyl 12-methyltridecanoate** iso-Tetradecanoic methyl ester; iso C14 methyl ester $C_{15}H_{30}O_2$ **CAS#:** 5129-58-8 **Source:** synthetic **Mol. Wt.:** 242 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1605	**13-Methyltetradecanoic acid** iso-Pentadecanoic acid; iso C15 acid $C_{15}H_{30}O_2$ **CAS#:** 27836-87-9 **Source:** synthetic **Mol. Wt.:** 242 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1600	**Methyl 13-methyltetradecanoate** iso-Pentadecanoic methyl ester; iso C15 methyl ester $C_{16}H_{32}O_2$ **CAS#:** 5129-59-9 **Source:** synthetic **Mol. Wt.:** 256 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1601	**Methyl 14-methylpentadecanoate** iso-Palmitic methyl ester; iso C16 methyl ester $C_{17}H_{34}O_2$ **CAS#:** 5129-60-2 **Source:** synthetic **Mol. Wt.:** 270 **Purity:** 98+% by GC **Appearance:** liqiud **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**

1606	**15-Methylhexadecanoic acid** iso-Heptadecanoic acid; iso C17 acid $C_{17}H_{34}O_2$ **CAS#:** 1603-03-8 **Source:** synthetic **Mol. Wt.:** 270 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1602	**Methyl 15-methylhexadecanoate** iso-Heptadecanoic methyl ester; iso C17 methyl ester $C_{18}H_{36}O_2$ **CAS#:** 6929-04-0 **Source:** synthetic **Mol. Wt.:** 284 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1603	**Methyl 17-methyloctadecanoate** iso-Nonadecanoic methyl ester; iso C19 methyl ester $C_{20}H_{40}O_2$ **CAS#:** 55124-97-5 **Source:** synthetic **Mol. Wt.:** 313 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**

Anteiso-Fatty Acids and Esters



Catalog number 1615

1615	**12-Methyltetradecanoic acid** anteiso-Pentadecanoic acid; anteiso C15 acid $C_{15}H_{30}O_2$ **CAS#:** 5502-94-3 **Source:** synthetic **Mol. Wt.:** 242 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1612	**Methyl 12-methyltetradecanoate** anteiso-Pentadecanoic methyl ester; anteiso C15 methyl ester $C_{16}H_{32}O_2$ **CAS#:** 5129-66-8 **Source:** synthetic **Mol. Wt.:** 256 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1613	**Methyl 13-methylpentadecanoate** anteiso-Palmitic methyl ester; anteiso C16 methyl ester $C_{17}H_{34}O_2$ **CAS#:** 5487-50-3 **Source:** synthetic **Mol. Wt.:** 270 **Purity:** 98+% by GC **Appearance:** liquid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**
1616	**14-Methylhexadecanoic acid** anteiso-Heptadecanoic acid; anteiso C17 acid $C_{17}H_{34}O_2$ **CAS#:** 5918-29-6 **Source:** synthetic **Mol. Wt.:** 270 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, ethanol **Storage:** –20°C	**20 mg**

1614 **Methyl 14-methylhexadecanoate** **20 mg**
anteiso-Heptadecanoic methyl ester; anteiso C17 methyl ester $C_{18}H_{36}O_2$
CAS#: 2490-49-5

Source: synthetic **Mol. Wt.:** 284 **Purity:** 98+% by GC **Appearance:** liquid
Solubility: chloroform, ethyl ether, ethanol **Storage:** –20°C

Methylated Fatty Acids

1207 **D,L-2,6-Dimethylheptanoic acid** **50 mg**
2,6-Dimethyl C7:0 fatty acid $C_9H_{18}O_2$

Source: synthetic **Mol. Wt.:** 158 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform **Storage:** room temperature

1791 **10-Methylhexadecanoic acid** **25 mg**
10-Methyl C16:0 fatty acid $C_{17}H_{34}O_2$

Source: synthetic **Mol. Wt.:** 270 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform **Storage:** room temperature

1792 **Methyl 10-methylhexadecanoate** **25 mg**
10-Methyl C16:0 fatty acid methyl ester $C_{18}H_{36}O_2$

Source: synthetic **Mol. Wt.:** 284 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform **Storage:** room temperature

1195 **Phytanic acid** **25 mg**
3,7,11,15-Tetramethylhexadecanoic acid $C_{20}H_{40}O_2$ **CAS#:** 14721-66-5

Source: semi-synthetic **Mol. Wt.:** 312 **Purity:** 97+% by GC **Appearance:** solid
Solubility: chloroform, methanol **Storage:** –20°C

Cyclopropyl Fatty Acids and Esters

1822 **Dihydrosterculic acid** **25 mg**
cis-9,10-Methyleneoctadecanoic acid $C_{19}H_{36}O_2$ **CAS#:** 4675-61-0

Source: synthetic **Mol. Wt.:** 296 **Melting Point (°C):** 38-42 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, hexane
Storage: –20°C **References:** 242, 243, 244

1823 **Methyl cis-9,10-methylene-octadecanoate, C19:0 delta (all cis-9,10)** **25 mg**
Methyl dihydrosterculate $C_{20}H_{38}O_2$ **CAS#:** 3971-54-8

Source: synthetic **Mol. Wt.:** 310 **Purity:** 98+% by TLC, GC **Appearance:** liquid
Solubility: chloroform, ethanol, methanol, hexane **Storage:** –20°C
References: 242, 243, 244

Unusual Fatty Acids and Derivatives

1751 **N-Oleoylethanolamine** **100 mg**
NOE $C_{20}H_{39}NO_2$ **CAS#:** 111-58-0

Source: synthetic **Mol. Wt.:** 326 **Melting Point (°C):** 63-66 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, ethyl ether, DMSO **Storage:** –20°C **References:** 91,92,93

Activity: acid ceramidase inhibitor

1786 **N-Hexadecanoylethanolamine** **100 mg**
$C_{18}H_{37}NO_2$ **CAS#** 544-31-0

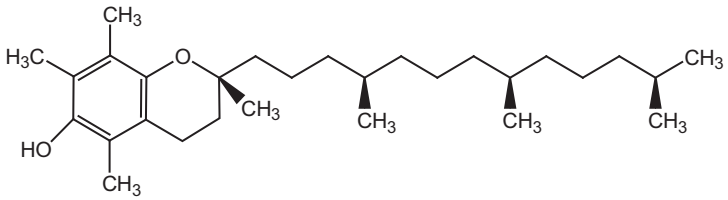
Source: synthetic **Mol. Wt.:** 299 **Melting Point (°C):** 99-102 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol, **Storage:** –20°C **References:** 91,92,93

Activity: inactive as acid ceramidase inhibitor

Other Lipids

Tocopherols

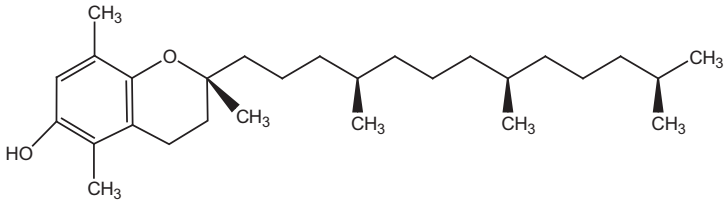
Catalog number 1072



1072 **rac-alpha-Tocopherol** **50 mg/ml, 1 ml**
5,7,8-Trimethyltocol $C_{29}H_{50}O_2$ **CAS#:** 59-02-9

Source: synthetic **Mol. Wt.:** 431 **Purity:** 95% by TLC, 98% by GC **Appearance:** liquid **Solvent:** hexane **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:** 173,174,175,176

Catalog number 1071



1071 **rac-beta-Tocopherol** **50 mg/ml, 1 ml**
5,8-Dimethyltocol $C_{28}H_{48}O_2$ **CAS#:** 148-03-8

Source: synthetic **Mol. Wt.:** 417 **Purity:** 95% by TLC, 98% by GC **Appearance:** liquid **Solvent:** hexane **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C

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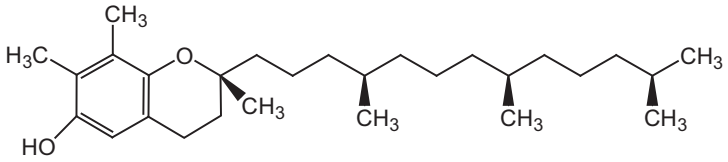
Catalog number 1073

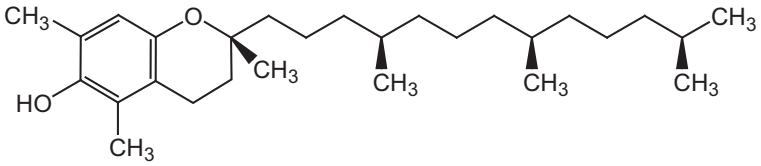


1073 **rac-gamma-Tocopherol** **50 mg/ml, 1 ml**

7,8-Dimethyltocol $C_{28}H_{48}O_2$ **CAS#:** 73980-80-0

Source: synthetic **Mol. Wt.:** 417 **Purity:** 95% by TLC, 97% by GC
Appearance: liquid **Solvent:** hexane **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C

Catalog number 1074

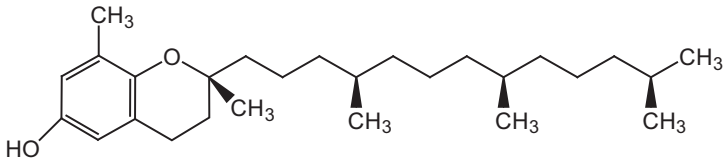


1074 **rac-5,7-Dimethyltocol** **50 mg/ml, 1 ml**

$C_{28}H_{48}O_2$ **CAS#:** 493-35-6

Source: synthetic **Mol. Wt.:** 417 **Purity:** 95% by TLC, 98% by GC
Appearance: liquid **Solvent:** hexane **Solubility:** hexane, ethyl ether, chloroform, alcohols **Storage:** –20°C

Catalog number 1790

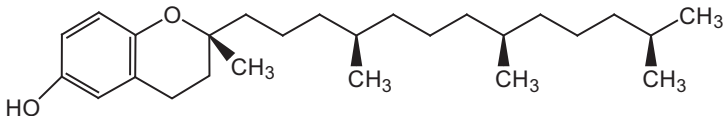


1790 **(+)-delta-Tocopherol** **50 mg/ml, 1 ml**

8-Methyltocol $C_{27}H_{46}O_2$ **CAS#:** 119-13-1

Source: natural, plant **Mol. Wt.:** 403 **Purity:** 95% by TLC, 98% by GC
Appearance: liquid **Solvent:** hexane **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C

Catalog number 1797



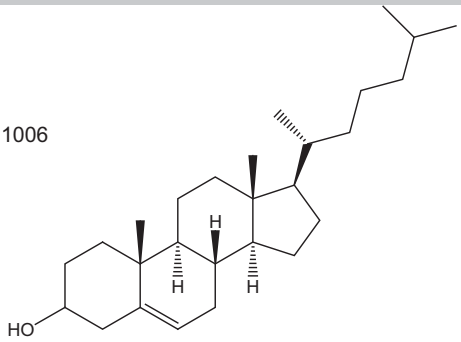
1797 **Tocol** **50 mg/ml, 1 ml**

rac-Tocol $C_{26}H_{44}O_2$

Source: synthetic **Mol. Wt.:** 389 **Purity:** 95% by TLC, 98% by GC
Appearance: liquid **Solvent:** hexane **Solubility:** hexane, methanol, ethanol
Storage: –20°C

Cholestane Derivatives

Catalog number 1006



1006 **Cholesterol** **500 mg**
$C_{27}H_{46}O$ **CAS#:** 57-88-5

Source: natural, ovine **Mol. Wt.:** 387 **Melting Point (°C):** 147-148 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** chloroform, ethanol **Storage:** –20°C

1115 **5-alpha-Cholestane** **100 mg**
$C_{27}H_{48}$ **CAS#:** 481-21-0

Source: synthetic **Mol. Wt.:** 373 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, hexane **Storage:** –20°C

1116 **Coprostanol** **25 mg**
5-beta-Cholestan-3-beta-ol $C_{27}H_{48}O$ **CAS#:** 360-68-9

Source: semi-synthetic **Mol. Wt.:** 389 **Melting Point (°C):** 101-103 **Purity:** 98+% by GC **Appearance:** solid **Solubility:** chloroform, ethyl ether, warm methanol **Storage:** –20°C

Plant Sterols and Steryl Glucosides

1119 **Plant sterol mix** **25 mg/ml, 1 ml**
Sterol mixture, qualitative

Source: natural, plant **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C

Contains: Brassicasterol (13%), campesterol (26%), stigmasterol (7%), β-sitosterol (53%) in order of elution

1123 **Plant sterols kit** **1 kit**
Sterols kit

Source: synthetic or plant **Appearance:** liquid/solid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C

Contains in individual packages: steryl glucosides 25 mg, esterified steryl glucosides 10 mg, plant sterol mixture 25 mg, β-sitosterol (55%) 100 mg, desmosterol (85%) 2 mg, lanosterol (55%) 100 mg, stigmasterol 25 mg, ergosterol 25 mg, coprostanol 5 mg, cholestanol 100 mg

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1113 **β-Sitostanol** **50 mg**
Stigmastanol $C_{29}H_{52}O$ **CAS#:** 19466-47-8

Source: synthetic **Mol. Wt.:** 417 **Melting Point (°C):** 127-132 **Purity:** 98+% by TLC, 97+% by GC **Appearance:** solid **Solubility:** chloroform **Storage:** –20°C

1120 **Lanosterol** **500 mg**
$C_{30}H_{50}O$ **CAS#:** 79-63-0

Source: synthetic or plant **Mol. Wt.:** 427 **Purity:** 55% by TLC, GC **Appearance:** solid **Solubility:** chloroform **Storage:** –20°C

1121 **Stigmasterol** **100 mg**
5,22-cholestadien-24-beta-ethyl-3-beta-ol $C_{29}H_{48}O$ **CAS#:** 83-48-7

Source: synthetic **Mol. Wt.:** 413 **Melting Point (°C):** 165-167 **Purity:** 95% by TLC, GC **Appearance:** solid **Solubility:** chloroform **Storage:** –20°C

1122 **Ergosterol** **100 mg**
$C_{28}H_{44}O$ **CAS#:** 57-87-4

Source: synthetic or plant **Mol. Wt.:** 397 **Melting Point (°C):** 156-158 **Purity:** 95% by TLC, GC **Appearance:** solid **Solubility:** chloroform **Storage:** –20°C

1117 **Steryl glucosides** **25 mg**
$C_{35}H_{60}O_6$

Source: natural, plant **Mol. Wt.:** 577 (based on β-sitosteryl glucoside) **Melting Point (°C):** 283-287 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol/water, 2:1:0.1 (warm) **Storage:** –20°C

1118 **Esterified steryl glucosides** **10 mg**
1:1:1, sterol:glucose:fatty acid $C_{51}H_{90}O_7$

Source: natural, plant **Mol. Wt.:** 815 (based on β-sitosteryl glucoside palmitate) **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethyl ether, pyridine **Storage:** –20°C

Sterol, glucose and fatty acid in a molar ratio 1:1:1.

Propyleneglycol Monoesters

1862 **2-Hydroxypropyl hexadecanoate** **100 mg**
Propyleneglycol monopalmitate $C_{19}H_{38}O_3$

Source: synthetic **Mol. Wt.:** 314 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** hexane, ethyl ether, alcohol, chloroform, **Storage:** –20°C

1863 **2-Hydroxypropyl octadecanoate** **100 mg**
Propyleneglycol monostearate $C_{21}H_{42}O_3$

Source: synthetic **Mol. Wt.:** 342 **Purity:** 98+% by TLC, GC **Appearance:** solid **Solubility:** hexane, ethyl ether, alcohol, chloroform, **Storage:** –20°C

Standards and Reference Compounds

Food Industry Mixes

Each methyl ester mix is carefully prepared by weight.

4210 **KEL-FIM-FAME-5 mix** **15.5 mg/ml 1 ml**
Methyl ester mix

Source: synthetic or plant **Appearance:** liquid **Solvent:** heptane **Solubility:** heptane **Storage:** –20°C

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], listed in order of their elution.

2009 **FIM-FAME-6 mix** **33 mg/ml, 1 ml**
Methyl ester mix

Source: synthetic or plant **Appearance:** liquid **Solvent:** heptane
Solubility: **Storage:** –20°C

Contains the methyl esters of these fatty acids. Each methyl ester is 3.03% of the mixture except C16:0 which is 6.06%. C4:0 , C6:0 , C8:0, C10:0 , C11:0, C12:0, C13:0 , C14:0, C14:1(cis-9), C15:0, C15:1(cis-10), C16:0, C16:1(cis-9), C17:0, C17:1(cis-10), C18:0, C18:1(trans-9), C18:1(cis-9), C18:2(all-cis-9,12), C20:0, C18:3(all-cis 6,9,12), C20:1(cis-11), C18:3(all-cis 9,12,15), C20:2(all-cis 11,14), C22:0, C20:3(all-cis 8,11,14), C22:1(cis 13), C20:3(all-cis 11,14,17), C20:4(all-cis 5,8,11,14), C22:2(all-cis 13,16), C24:1(cis-15), C22:6(all-cis 4,7,10,13,16,19), listed in order of their elution.

2010 **FIM-FAME-7 mix** **30 mg/ml, 1 ml**
Methyl ester mix

Source: synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride
Solubility: methylene chloride **Storage:** –20°C

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(all-trans-9,12) [2.0], C18:2(all-cis-9,12) [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(all-cis 11,14) [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(all-cis 13,16) [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}, listed in order of their elution.

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Polyunsaturated Fatty Acid Methyl Esters Mixes

These are complex qualitative standard mixtures of polyunsaturated fatty acid methyl esters. Because they are extracted from natural materials, relative peak sizes may vary from lot to lot.

1093 **PUFA-1** **100 mg**
Qualitative mix

Source: natural, fish oil **Appearance:** liquid **Solubility:** chloroform, ethanol, hexane, methanol **Storage:** –20°C **References:** 148,149,150

Contains: C14:0, C16:0, C16:1ω7, C18:1ω9, C18:1ω7, C18:2ω6, C20:1ω9, C18:4ω3, C22:1ω11, C22:1ω9, C20:5ω3, C22:5ω3, C22:6ω3

1081 **PUFA-2** **100 mg**
Qualitative mix

Source: natural, porcine **Appearance:** liquid **Solubility:** alcohols, hexane, chloroform **Storage:** –20°C **References:** 148,149,150

Contains: C14:0, C16:0, C16:1ω7, C18:0, C18:1ω9, C18:1ω7, C18:2ω6, C18:3ω6, C18:3ω3, C20:1ω9, C20:2ω6, C20:3ω6, C20:4ω6, C20:5ω3, C22:4ω6, C22:5ω3, C22:6ω3

1177 **PUFA-3** **100 mg**
Qualitative mix

Source: natural, menhaden oil **Appearance:** liquid **Solubility:** alcohols, hexane, chloroform **Storage:** –20°C **References:** 157,158,159

Contains: C14:0, C16:0, C16:1ω7, C16:2ω4, C16:3ω4, C16:4ω1, C18:0, C18:1ω9, C18:1ω7, C18:2ω6, C18:2ω4, C18:3ω4, C18:3ω3, C18:4ω3, C20:1ω9, C20:4ω6, C20:4ω3, C20:5ω3, C21:5ω3, C22:5ω3, C22:6ω3

Carbohydrate Mixes

1124 **Alditol acetate mix-1** **50 mg/ml, 1 ml**
Quantitative carbohydrate mix

Source: synthetic **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C

Contains: rhamnitol, fucitol, ribitol and arabinitol pentaacetates, 12.5 mg/ml each

1125 **Alditol acetate mix-2** **50 mg/ml, 1 ml**
Quantitative carbohydrate mix

Source: synthetic **Appearance:** liquid **Solvent:** chloroform **Solubility:** chloroform **Storage:** –20°C

Contains: mannitol, galactitol, glucitol and inositol hexaacetates, 12.5 mg/ml each

Other Fatty Acid Methyl Ester Mixes

1722 **2-Hydroxy methyl ester mix** **10 mg/ml, 1 ml**

Source: synthetic **Appearance:** liquid **Solvent:** methylene chloride
Solubility: methylene chloride **Storage:** –20°C

Quantitative mix contains: C14:0, 20%; C16:0, 20%; C18:0, 15%; C20:0, 15%; C22:0, 10%; C23:0, 10%; C24:0, 10%

1131 **Cis-trans isomer standard** **5 mg/ml, 5 ml**

Source: margarine **Appearance:** liquid **Solvent:** 5ml methylene chloride
Solubility: methylene chloride, chloroform **Storage:** –20°C

Analysis of positional cis-trans fatty acid isomers is ever more important in light of the new food industry rules. These isomers can be resolved on Supelco SP-2560 or an equivalent capillary GC column. Use this specially formulated mix to ensure proper operation of your column for this tricky separation. Mix consists of cis-trans fatty acid isomers as methyl esters in methylene chloride.

This is a qualitative standard containing in order of elution: C16:0, C18:0, C18:1 trans isomers (4 peaks), C18:1 cis & trans isomers (2 peaks), C18:1 cis isomers (4 peaks), C18:2, C20:0, C20:1 and C18:3 (same peak), C22:0

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AOCS Animal and Vegetable Oil Reference Mixes (RM mixes)

By studying problems with the quantitative analysis of animal and vegetable oils and fats, the American Oil Chemists' Society has found certain mixtures to be useful as reference standards. The composition of each mixture (see Table I below) is similar to the fatty acid distribution of certain oils. All mixtures are in methyl ester form and ready for GC analysis

Table I. AOCS Oil Reference Mixes

Each methyl ester mixture is carefully prepared by weight and the composition verified by gas chromatography. The weight percentage of each component is indicated in the Table.

Mix No. Catalog No.	RM-1 1084	RM-2 1085	RM-3 1086	Rapeseed 1083	RM-4 1087	RM-5 1088	RM-6 1089
C8:0 Caprylate						7.0	
C10:0 Caprate						5.0	
C12:0 Laurate						48.0	
C14:0 Myristate			1.0	1.0		15.0	2.0
C16:0 Palmitate	6.0	7.0	4.0	4.0	11.0	7.0	30.0
C16:1 Palmitoleate							3.0
C18:0 Stearate	3.0	5.0	3.0	3.0	3.0	3.0	14.0
C18:1 Oleate	35.0	18.0	45.0	60.0	80.0	12.0	41.0
C18:2 Linoleate	50.0	36.0	15.0	12.0	6.0	3.0	7.0
C18:3 Linolenate	3.0	34.0	3.0	5.0			3.0
C20:0 Arachidate	3.0		3.0	3.0			
C20:1 Eicosenoate				1.0			
C22:0 Behenate			3.0	3.0			
C22:1 Erucate			20.0	5.0			
C24:0 Lignocerate			3.0	3.0			

1083 **Rapeseed oil reference mixture** **25 mg/ml, 1 ml**

AOCS rapeseed oil reference mix

Source: synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride
Solubility: ethyl ether, methylene chloride **Storage:** –20°C

Suitable standard for low erucic acid oil

1084 **RM-1 mix** **50 mg**
AOCS reference mix RM-1

Source: synthetic or plant **Appearance:** liquid **Solubility:** chloroform, ethyl ether
Storage: –20°C **References:** 148,150

Suitable standard for corn, cottonseed, soybean, safflower, sesame, poppy seed, walnut kapok, and rice oils

1085	**RM-2 mix** AOCS reference mix RM-2 **Source:** synthetic or plant **Appearance:** liquid **Solubility:** chloroform, ethanol, ethyl ether **Storage:** –20°C Suitable standard for linseed, perilla, hempseed, and rubberseed oils	**50 mg**
1086	**RM-3 mix** AOCS reference mix RM-3 **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** ethyl ether, methylene chloride **Storage:** –20°C Suitable standards for peanut, rapeseed, and mustard seed oils	**50 mg/ml, 1 ml**
1087	**RM-4 mix** AOCS reference mix RM-4 **Source:** synthetic or plant **Appearance:** liquid **Solubility:** chloroform, ethyl ether **Storage:** –20°C Suitable standard for olive, teaseed, and neatsfoot oils	**50 mg**
1088	**RM-5 mix** AOCS reference mix RM-5 **Source:** synthetic or plant **Appearance:** liquid **Solubility:** chloroform **Storage:** –20°C Suitable standard for coconut, palm kernel, babassu and ouri-ouri oils	**50 mg**
1089	**RM-6 mix** AOCS reference mix RM-6 **Source:** synthetic or plant **Appearance:** liquid **Solubility:** ethyl ether, methylene chloride **Storage:** –20°C Suitable standard for lard, beef tallow, mutton tallow, and palm oil	**50 mg**
1082	**RM-7 kit** AOCS reference mix RM-7 kit **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C 50 mg ampules of RM-1, RM-2, RM-3, RM-4, RM-5, RM-6, and 25 mg of Rapeseed oil reference mixture	**50 mg ampules**

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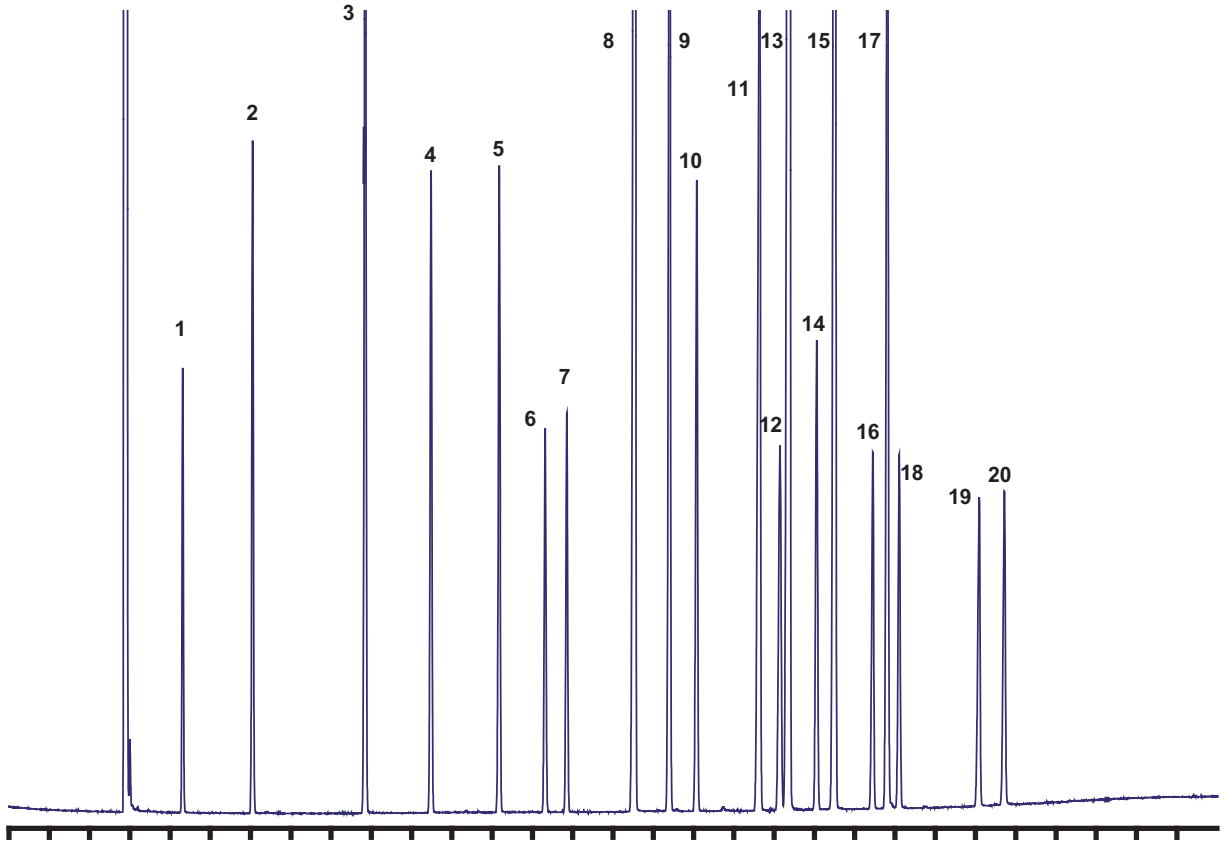
Custom Mixes

Custom fatty acid methyl ester mixes can be prepared to your specification. Minimum quantity requirements apply to these orders.



Cat# 4210 spiked with 0.4 mg/ml C18:2t ester (methyl linoelaidate) and chromatographed on a Supelco SP 2330 fused silica column.

Peak number	FAME
1	C8:0
2	C10:0
3	C12:0
4	C13:0
5	C14:0
6	C14:1
7	C15:0
8	C16:0
9	C16:1
10	C17:0
11	C18:0
12	C18:1t-9
13	C18:1c-9
14	C18:2t,t-9,12
15	C18:2c,c-9,12
16	C20:0
17	C18:3
18	C20:1
19	C22:0
20	C22:1

Table II. Standards for GC Analysis

GLC Standard Mixes

GLC-10 through GLC-100 standards are **equal weight measures** of fatty acid methyl esters. They are quantitative standards, useful for determining relative **retention times and response factors.**

Each methyl ester mixture is carefully prepared by weight and the composition verified by gas chromatography. The weight percentage of each component is indicated below. All double bonds are cis.

Mixture Number Catalog Number	GLC-10 1095	GLC-30 1097	GLC-40 1098	GLC-50 1099	GLC-60 1100	GLC-70 1101	GLC-80 1102	GLC-90 1103	GLC-100 1104
C8:0 Caprylate		20.0				20.0			
C9:0 Nonanoate						20.0			
C10:0 Caprate		20.0				20.0			
C11:0 Undecanoate						20.0			
C12:0 Laurate		20.0				20.0			
C13:0 Tridecanoate							20.0	20.0	
C14:0 Myristate		20.0					20.0		
C15:0 Pentadecanoate							20.0	20.0	
C16:0 Palmitate	20.0	20.0	25.0				20.0		
C16:1 Palmitoleate-9 cis				20.0					
C17:0 Heptadecanoate							20.0	20.0	
C18:0 Stearate	20.0		25.0						20.0
C18:1 Oleate-9 cis	20.0			20.0					
C18:2 Linoleate-9,12 all cis	20.0								
C18:3 Linolenate-9,12,15 all cis	20.0								
C19:0 Nonadecanoate								20.0	20.0
C20:0 Arachidate			25.0		25.0				20.0
C20:1 Eicosenoate-11 cis				20.0	25.0				
C20:2 Eicosadienoate-11,14 all cis					25.0				
C20:3 Eicosatrienoate-11,14,17 all cis					25.0				
C21:0 Heneicosanoate								20.0	20.0
C22:0 Behenate			25.0						20.0
C22:1 Erucate-13				20.0					
C24:1 Nervonate				20.0					

1095 **GLC-10 mix** **50 mg**
Quantitative GC mix

Source: synthetic or plant **Appearance:** liquid **Solubility:** methylene chloride
Storage: –20°C

1097 **GLC-30 mix** **50 mg**
Quantitative GC mix

Source: synthetic or plant **Appearance:** liquid **Solubility:** methylene chloride
Storage: –20°C

1098	**GLC-40 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**
1099	**GLC-50 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**
1100	**GLC-60 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**
1101	**GLC-70 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solubility:** methylene chloride **Storage:** –20°C	**50 mg**
1102	**GLC-80 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**
1103	**GLC-90 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**
1104	**GLC-100 mix** Quantitative GC mix **Source:** synthetic or plant **Appearance:** liquid **Solvent:** methylene chloride **Solubility:** methylene chloride **Storage:** –20°C	**50 mg/ml, 1 ml**

Water Soluble Fatty Acid Mixes

1106	**WSFA-2 mix** Water soluble fatty acid qualitative mix **Appearance:** liquid **Solvent:** water **Solubility:** water **Storage:** Room Temp Contains: acetic, propionic, isobutyric, n-butyric, isovaleric and n-valeric acids	**5 ml**

1108 **WSFA-4 mix** **5 ml**

Water soluble fatty acid qualitative mix

Appearance: liquid **Solvent:** water **Solubility:** water **Storage:** Room Temp

Contains: acetic, propionic, isobutyric, n-butyric, 2-methylbutyric, isovaleric and n-valeric acids

Microbiology Standard Mixes

1105 **GLC-110 mix** **10 mg/ml, 1 ml**

Bacterial lipid standard, qualitative mix

Source: various **Appearance:** liquid **Solvent:** chloroform **Solubility:** methylene chloride, chloroform **Storage:** –20°C

Contains:

methyl 12-methyltridecanoate	(iso-C14:0)	methyl 14-methylpentadecanoate	(iso-C16:0)
methyl myristate	(C14:0)	methyl palmitate	(C16:0)
methyl 12-methyltetradecanoate	(anteiso-C15:0)	methyl 14-methylhexadecanoate	(anteiso-C17:0)
methyl pentadecanoate	(C15:0)		

1114 **Bacterial acid methyl esters CP mix** **10 mg/ml, 1 ml**

Qualitative mix

Source: various **Appearance:** liquid **Solvent:** methyl caproate **Solubility:** hexane, ethanol, methanol **Storage:** –20°C **References:** 186,187,188

A qualitative standard. Mixture consists of equal amounts of the compounds listed.

Methyl undecanoate	C11:0	Methyl cis-9-hexadecenoate (palmitoleate)	C16:1(cis-9)
Methyl 2-hydroxydecanoate	2-OH C10:0	Methyl hexadecanoate (palmitate)	C16:0
Methyl dodecanoate (laurate)	C12:0	Methyl 15-methylhexadecanoate	iso-C17:0
Methyl tridecanoate	C13:0	Methyl cis-9,10-methylenehexadecanoate	C17:0Δ (all cis-9,12)
Methyl 2-hydroxydodecanoate	2-OH C12:0	Methyl heptadecanoate (margarate)	C17:0
Methyl 3-hydroxydodecanoate	3-OH C12:0	Methyl 2-hydroxyhexadecanoate	2-OH C16:0
Methyl tetradecanoate (myristate)	C14:0	Methyl cis-9,12-octadecadienoate (linoleate)	C18:2 (all cis-9,12)
Methyl 13-methyltetradecanoate	iso-C15:0	Methyl cis-9-octadecenoate (oleate)	C18:1(cis-9)
Methyl 12-methyltetradecanoate	anteiso-C15:0	Methyl trans-9-octadecenoate (elaidate)	C18:1 (trans-9)
Methyl pentadecanoate	C15:0	Methyl octadecanoate (stearate)	C18:0
Methyl 2-hydroxytetradecanoate	2-OH C14:0	Methyl cis-9,10-methyleneoctadecanoate	C19:0Δ (all cis-9,10)
Methyl 3-hydroxytetradecanoate	3-OH C14:0	Methyl nonadecanoate	C19:0
Methyl 14-methylpentadecanoate	iso-C16:0	Methyl eicosanoate (arachidate)	C20:0

1075 **Volatile acid mix** **100 ml**

Qualitative mix

Appearance: liquid **Solvent:** water **Solubility:** water
Storage: 4-8°C

Contains: formic, acetic, propionic, isobutyric, n-butyric, isovaleric, n-valeric, isocaproic, n-caproic, and heptanoic acids

1077 **Non-volatile acid mix** **100 ml**

Qualitative mix

Appearance: liquid **Solvent:** water **Solubility:** water
Storage: 4-8°C

Contains: pyruvic, lactic, oxalacetic, oxalic, methyl malonic, malonic, fumaric and succinic acids.

Biochemical Research Standard Mixes

These mixtures are prepared by precise gravimetric technique. All mixes contain equal amounts of listed components. A data sheet is supplied with each mixture.

1127 **Polar lipid mix** **25 mg/ml, 1 ml**
TLC standards mix

Source: natural, egg, ovine **Appearance:** liquid **Solvent:** chloroform/methanol 2:1
Solubility: chloroform/methanol 2:1 **Storage:** –20°C

Contains: cholesterol, phosphatidylethanolamine, lecithin, and lyso-lecithin

1128 **Sphingolipid mix** **25 mg/ml, 1 ml**
TLC standards mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol 2:1
Solubility: chloroform/methanol 2:1 **Storage:** –20°C

Contains: cerebrosides, sulfatides, and sphingomyelin

1129 **Non-polar lipid mix A** **25 mg/ml, 1 ml**
TLC standards mix

Source: natural, plant, ovine **Appearance:** liquid **Solvent:** chloroform
Solubility: chloroform **Storage:** –20°C

Contains: cholesteryl palmitate, tripalmitin, palmitic acid, and cholesterol

1130 **Non-polar lipid mix B** **25 mg/ml, 1 ml**
TLC standards mix

Source: natural, plant, ovine **Appearance:** liquid **Solvent:** chloroform
Solubility: chloroform **Storage:** –20°C

Contains: cholesteryl oleate, methyl oleate, triolein, oleic acid, and cholesterol

Glycosphingolipid Mixtures for TLC

These mixtures are qualitative standards prepared from our purified glycosphingolipids.

1505 **Neutral glycosphingolipid qualmix,** **1 mg/ml, 1 ml**
Glycosylceramides, qualitative mix

Source: natural, bovine and porcine **Appearance:** liquid
Solvent: chloroform/methanol 2:1 **Solubility:** chloroform/methanol 2:1
Storage: –20°C

Contains: cerebrosides, lactosylceramide, ceramide trihexoside, globoside

1508 **Monosialoganglioside mix** **0.5 mg/ml, 1 ml**
GM_3, GM_2, GM_1 qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: GM_3, GM_2, GM_1

1509 **Disialoganglioside mix** **0.5 mg/ml, 1 ml**
GD_3, GD_{1a}, GD_{1b}, qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: GD_3, GD_{1a}, GD_{1b}

1510 **Lactosylceramide and sialosyl derivatives mix** **0.5 mg/ml, 1 ml**
LC, GM_3, GD_3 qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: LC, GM_3, GD_3

1511 **Gangliotetraosylceramide and sialosyl derivatives mix** **0.5 mg/ml, 1 ml**
asialo-GM_1, GM_1, GD_{1a}, GD_{1b}, GT_{1b} qualitative mix

Source: natural, bovine **Appearance:** liquid **Solvent:** chloroform/methanol/water 2:1:0.1 **Solubility:** chloroform/methanol/water 2:1:0.1 **Storage:** –20°C

Contains: asialo-GM_1, GM_1, GD_{1a}, GD_{1b}, GT_{1b}

Biochemicals and Reagents

Stable Isotope Labeled Compounds

1914 **N-Stearoyl-D_{35}-psychosine, perdeuterated** **5 mg**
Cerebrosides with N-C18:0-D_{35} fatty acid side chain $C_{42}H_{46}D_{35}NO_8$

Source: semisynthetic, bovine **Mol. Wt.:** 762 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, hot ethanol, chloroform/methanol 2:1
Storage: –20°C

1533 **N-Palmitoyl-D_3-glucopsychosine, deuterated** **1 mg**
N-C16:0-D_3-Glucopsychosine; glucocerebroside with C16:0-D_3 fatty acid side chain $C_{40}H_{74}D_3NO_8$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 703 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1534 **N-Palmitoyl-D_3-lactosylceramide, deuterated** **1 mg**

N-C16:0-D_3-Lactosylceramide; lactosylceramide with C16:0-D_3 fatty acid side chain $C_{46}H_{84}D_3NO_{13}$

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 864 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/water 5:1:0.1
Storage: –20°C

---

1 mg

2200 **N-1-^{13}C-Palmitoyl-sphingosylphosphorylcholine**

D-erythro-Sphingomyelin with 1-^{13}C-palmitic acid; SPM with ^{13}C labeled fatty acid $^{12}C_{38}{}^{13}CH_{79}N_2O_6P$

Source: semisynthetic, bovine **Mol. Wt.:** 703 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

1536 **N-Octadecanoyl-D_3-sulfatide** **1 mg**

N-C18:0-D_3-Sulfatide $C_{42}H_{78}D_3NO_{11}S$

Source: semisynthetic, bovine **Mol. Wt.:** 833 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol/DI water 2:1:0.1
Storage: –20°C

1537 **N-Octadecanoyl-D_3-ceramide trihexoside** **0.5 mg**

C18:0-D_3-CTH; C18:0-D_3-Gb3; N-Octadecanoyl-D_3-globotriaosylceramide
$C_{54}H_{98}D_3NO_{18}$

Source: semisynthetic, porcine **Mol. Wt.:** 1055 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1:, DMSO **Storage:** –20°C

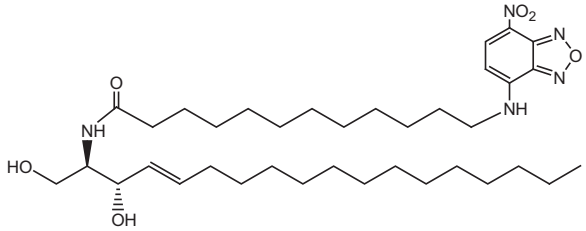
Fluorescent Compounds

1841 **N-Hexanoyl-NBD-D-erythro-sphingosine** **100 µg**
1841-001 **1 mg**

N-C6:0-NBD-ceramide; N-C6:0-NBD-D-erythro-sphingosine, fluorescent; N-(NBD-aminocaproyl)-D-erythro-sphingosine $C_{30}H_{49}N_5O_6$ **CAS#:** 86701-10-2

Source: synthetic **Mol. Wt.:** 575 **Melting Point (°C):** 85-88 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C
Reference: 9

Catalog number 1618



Excitation: 460 nm
Emission: 535 nm

1618 **N-Dodecanoyl-NBD-D-erythro-sphingosine** **100 µg**
1618-001 **1 mg**

N-C12:0-NBD-ceramide; N-C12:0-NBD-D-erythro-sphingosine, fluorescent; N-(NBD-aminolauroyl)-D-erythro-sphingosine $C_{36}H_{61}N_5O_6$

Source: synthetic **Mol. Wt.:** 660 **Purity:** 98+% by TLC **Appearance:** solid
Solubility: chloroform/methanol 2:1, methanol **Storage:** –20°C

1857 **1857-001**	**N-Hexanoyl-NBD-L-threo-sphingosine** N-C6:0-NBD-ceramide; N-C6:0-NBD-L-threo-sphingosine, fluorescent; N-(NBD-aminocaproyl)-L-threo-sphingosine $C_{30}H_{49}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 575 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C **Reference:** 9	**100 µg** **1 mg**
1620 **1620-001**	**N-Dodecanoyl-NBD-L-threo-sphingosine** N-C12:0-NBD-ceramide; N-C12:0-NBD-L-threo-sphingosine, fluorescent; N-(NBD-aminolauroyl)-L-threo-sphingosine $C_{36}H_{61}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 660 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1624 **1624-001**	**N-Hexanoyl-NBD-L-threo-dihydrosphingosine** N-C6:0-NBD-dihydroceramide; N-C6:0-NBD-L-threo-dihydrosphingosine, fluorescent; N-(NBD-aminocaproyl)-L-threo-dihydrosphingosine $C_{30}H_{51}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 578 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1623 **1623-001**	**N-Dodecanoyl-NBD-L-threo-dihydrosphingosine** N-C12:0-NBD-dihydroceramide; N-C12:0-NBD-L-threo-dihydrosphingosine, fluorescent; N-(NBD-aminolauroyl)-L-threo-dihydrosphingosine $C_{36}H_{63}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 662 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1626 **1626-001**	**N-Hexanoyl-NBD-D-erythro-dihydrosphingosine** N-C6:0-NBD-dihydroceramide; N-C6:0-NBD-D-erythro-dihydrosphingosine, fluorescent; N-(NBD-aminocaproyl)-D-erythro-dihydrosphingosine $C_{30}H_{51}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 578 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1625 **1625-001**	**N-Dodecanoyl-NBD-D-erythro-dihydrosphingosine** N-C12:0-NBD-dihydroceramide; N-C12:0-NBD-D-erythro-dihydrosphingosine, fluorescent; N-(NBD-aminolauroyl)-D-erythro-dihydrosphingosine $C_{36}H_{63}N_5O_6$ **Source:** synthetic **Mol. Wt.:** 662 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**
1628 **1628-001**	**N-Hexanoyl-NBD-phytosphingosine** N-C6:0-NBD-phytoceramide; N-C6:0-NBD-phytosphingosine, fluorescent; N-(NBD-aminocaproyl)-phytosphingosine $C_{30}H_{51}N_5O_7$ **Source:** semisynthetic, bacteria **Mol. Wt.:** 594 **Purity:** 98+% by TLC **Appearance:** solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C	**100 µg** **1 mg**

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1627 **N-Dodecanoyl-NBD-phytosphingosine** **100 µg**
1627-001 N-C12:0-NBD-phytoceramide; N-C12:0-NBD-phytosphingosine, fluorescent; N-(NBD-aminolauroyl)-phytosphingosine $C_{36}H_{63}N_5O_7$ **1 mg**

Source: semisynthetic, bacteria **Mol. Wt.:** 678 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C

1912 **N-Hexanoyl-NBD-sphingosylphosphorylcholine** **100 µg**
1912-001 N-C6:0-NBD-sphingomyelin, fluorescent; N-C6:0-NBD-sphingosylphosphorylcholine; fluorescent sphingomyelin; N-(NBD-aminocaproyl)-sphingomyelin $C_{35}H_{61}N_6O_9P$ **CAS#:** 94885-04-8 **1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 740 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform, ethanol, methanol **Storage:** –20°C

Mixture of D-erythro and L-threo isomers

1619 **N-Dodecanoyl-NBD-sphingosylphosphorylcholine** **100 ug**
1619-001 N-C12:0-NBD-sphingomyelin, fluorescent; N-C12:0-NBD-sphingosylphosphorylcholine; fluorescent sphingomyelin; N-(NBD-aminolauroyl)-sphingomyelin $C_{41}H_{73}N_6O_9P$ **1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 825 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1, methanol **Storage:** –20°C

Mixture of D-erythro and L-threo isomers

1621 **N-Hexanoyl-NBD-galactosylceramide** **100 µg**
1621-001 N-C6:0-NBD-beta-D-galactosylsphingosine; N-C6:0-NBD-cerebrosides; N-C6:0-NBD-galactosylceramide, fluorescent; N-(NBD-aminocaproyl)-beta-D-galactosylsphingosine $C_{36}H_{59}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 5:1, methanol **Storage:** –20°C

1633 **N-Dodecanoyl-NBD-galactosylceramide** **100 µg**
1633-001 N-C12:0-NBD-beta-D-galactosylsphingosine; N-(NBD-aminododecanoyl)-beta-D-galactosylsphingosine; N-C12:0-NBD-cerebroside; N-C12:0-NBD-galactosylceramide, fluorescent; $C_{42}H_{71}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine spinal cord **Mol. Wt.:** 822 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/ methanol, 2:1; chloroform; DMSO
Storage: –20°C

1622 **N-Hexanoyl-NBD-glucosylceramide** **100 µg**
1622-001 N-C6:0-NBD-beta-D-glucosylsphingosine; N-C6:0-NBD-glucosylceramide, fluorescent; N-(NBD-aminocaproyl)-beta-D-glucosylsphingosine $C_{36}H_{59}N_5O_{11}$ **1 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 738 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 5:1, methanol **Storage:** –20°C

1629	**N-Hexanoyl-NBD-lactosylceramide**	**50 ug**
1629-001	N-Hexanoyl-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-beta-D-lactosylsphingosine; N-C6:0-NBD-lactosylceramide, fluorescent; fluorescent LC; N-(NBD-aminocaproyl)-beta-D-lactosylsphingosine $C_{42}H_{69}N_5O_{16}$	**1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 900 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1630	**N-Dodecanoyl-NBD-lactosylceramide**	**50 µg**
1630-001	N-Dodecanoyl-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-beta-D-lactosylsphingosine; N-C12:0-NBD-lactosylceramide, fluorescent; fluorescent LC; N-(NBD-aminolauroyl)-beta-D-lactosylsphingosine $C_{48}H_{81}N_5O_{16}$	**1 mg**

Source: semisynthetic, bovine buttermilk **Mol. Wt.:** 984 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

1631	**N-Dodecanoyl-NBD-ceramide trihexoside**	**100 µg**
1631-001	N-C12:0-NBD-CTH; N-C12:0-NBD-globotriaosylceramide; N-(NBD-aminolauroyl)-ceramide trihexoside $C_{54}H_{91}N_5O_{21}$	**1 mg**

Source: semisynthetic, porcine **Mol. Wt.:** 1145 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1: DMSO; hot methanol
Storage: –20°C

1632	**N-Dodecanoyl-NBD-sulfatide**	**100 µg**
1632-001	N-C12:0-NBD-sulfatide; N-Dodecanoyl-NBD-lyso-sulfatide; N-Dodecanoyl-NBD-sphingosyl-beta-D-galactoside-3-sulfate; N-(NBD-aminolauroyl)-sulfatide $C_{42}H_{71}N_5O_{14}S$	**1 mg**

Source: semisynthetic, bovine **Mol. Wt.:** 901 **Purity:** 98+% by TLC
Appearance: solid **Solubility:** chloroform/methanol 2:1 **Storage:** –20°C

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Appendix

Table III. Typical Fatty Acid Composition of Natural Lipids Made by Matreya LLC.
(actual composition may vary according to dietary history and growth condition of the source)

	Lecithin (egg)	Lecithin (bovine)	Lecithin (plant)	Phosphatidyl-ethanolamine (egg)	Phosphatidyl-ethanolamine (plant)	lyso-Lecithin (egg)	Phosphatidylserine (bovine)	Phosphatidylinositol (plant)
Catalog Number	**#1044**	**#1070**	**#1302**	**#1045**	**#1301**	**#1046**	**#1047**	**#1048**
Fatty Acids								
C14:0		trace						
C16:0	31	35	14	17	22	72	1	42
C16:1		1						
C18:0	16	14	4	29	3	24	42	
C18:1	31	33	11	17	7	3	27	6
C18:2	16		65	11	60			47
C18:3			6		8			5
C20:0							1	
C20:1							4	
C20:4				12			4	
C21:0								
C22:0							1	
C22:1							1	
C22:6							7	
C23:0								
C24:0								
C24:1								
C25:0								
C25:1								
C26:0								
C26:1								
C27:0								
C27:1								
C14:0 2-OH								
C16:0 2-OH								
C18:0 2-OH								
C20:0 2-OH								
C22:0 2-OH								
C23:0 2-OH								
C24:0 2-OH								
C24:1 2-OH								
C25:0 2-OH								
C25:1 2-OH								
C26:0 2-OH								
C26:1 2-OH								
C16 cis 9,10 methylene								
C18 cis 9,10 methylene								
Others	6	17	0	14	0	1	12	0
Total	100	100	100	100	100	100	100	100

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Typical Fatty Acid Composition of Natural Lipids Made by Matreya LLC (continued)

(actual composition may vary according to dietary history and growth condition of the source)

	Sphingomyelin (bovine)	Sphingomyelin (porcine RBC)	Phosphatidic acid (semi-synthetic)	Monogalactosyl-diglycerides (plant)	Digalactosyl-diglyceride (plant)	Monosialo-ganglioside GM_1	Disialoganglioside GD_{1a}
Catalog Number	**#1051**	**#1328**	**#1053**	**#1058**	**#1059**	**#1061**	**#1062**
Fatty Acids							
C14:0							1
C16:0	4	25	39	23	9	2	1
C16:1							
C18:0	40	7	12	77	91	90	89
C18:1			34				
C18:2			15				
C18:3							
C20:0	3	3				3	2
C20:1							
C20:4							
C21:0							
C22:0	13	9				1	1
C22:1							
C22:6							
C23:0	2	1					
C24:0	9	22					
C24:1	22	22				1	
C25:0							
C25:1							
C26:0							
C26:1							
C27:0							
C27:1							
C14:0 2-OH							
C16:0 2-OH							
C18:0 2-OH							
C20:0 2-OH							
C22:0 2-OH							
C23:0 2-OH							
C24:0 2-OH							
C24:1 2-OH							
C25:0 2-OH							
C25:1 2-OH							
C26:0 2-OH							
C26:1 2-OH							
C16 cis 9,10 methylene							
C18 cis 9,10 methylene							
Others	7	11	0	0	0	3	6
Total	100	100	100	100	100	100	100

Typical Fatty Acid Composition of Natural Lipids Made by Matreya LLC (continued)

(actual composition may vary according to dietary history and growth condition of the source)

	Trisialogang-lioside GT_{1b}	Gangliotetraosyl-ceramide	Purified mixed gangliosides (bovine)	Disialoganglioside GD_{1b}	Cerebrosides (bovine)	Cerebrosides Kerasin (bovine)	Cerebrosides Phrenosin (bovine)	Sulfatides (bovine)
Catalog Number	**#1063**	**#1064**	**#1065**	**#1501**	**#1050**	**#1066**	**#1138**	**#1049**
Fatty Acids								
C14:0		trace	trace	trace				
C16:0	1	1	1	1	trace	trace		trace
C16:1								
C18:0	87	86	86	86	4	5		5
C18:1	1	3	3	3				trace
C18:2								
C18:3								
C20:0	4	4	4	4	1	1		1
C20:1								
C20:4								
C21:0								
C22:0	1	2	2	2	4	9		7
C22:1						trace		trace
C22:6								
C23:0	1	1	1	1	2	5		
C24:0	1	1	1	1	10	25		18
C24:1	1	2	2	2	15	43		29
C25:0					3	3		2
C25:1					1	3		2
C26:0					2	2		1
C26:1					1	4		3
C27:0					2			1
C27:1					2			
C14:0 2-OH								
C16:0 2-OH								
C18:0 2-OH					15		36	5
C20:0 2-OH					1		1	trace
C22:0 2-OH					6		8	3
C23:0 2-OH					5		6	
C24:0 2-OH					17		25	10
C24:1 2-OH					6		9	6
C25:0 2-OH					3		4	2
C25:1 2-OH							2	
C26:0 2-OH							2	
C26:1 2-OH							2	
C16 cis 9,10 methylene								
C18 cis 9,10 methylene								
Others	3	0	0	0	0	0	5	5
Total	100	100	100	100	100	100	100	100

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Typical Fatty Acid Composition of Natural Lipids Made by Matreya LLC (continued)

(actual composition may vary according to dietary history and growth condition of the source)

	Ceramide trihexoside (porcine)	Globosides (porcine)	Esterified steryl glucoside	Ceramides (bovine)	Ceramides (non-hydroxy)	Ceramides (hydroxy)	Monosialoganglioside GM_4	Sphingomyelin, (egg, chicken)	Tetrasialoganglioside $GQ1_b$
Catalog Number	**#1067**	**#1068**	**#1118**	**#1056**	**#1322**	**#1323**	**#1535**	**#1332**	**#1516**
Fatty Acids									
C14:0								trace	
C16:0	3	2	34	trace			4	72	5
C16:1									1
C18:0	2	2	8	4	11		2	8	80
C18:1	2		8					3	2
C18:2			36						3
C18:3			4						
C20:0	2	2	1	1	2		trace	2	4
C20:1							trace		
C20:4									
C21:0									
C22:0	17	20	4	4	10		3	5	2
C22:1							4		
C22:6									
C23:0	1	2	2	2	6		4	1	
C24:0	29	33	2	10	24		6	2	
C24:1	5	5		15	31		4	4	
C25:0				9	3				
C25:1				1	3				
C26:0		2		2	2				
C26:1				1	3				
C27:0				2					
C27:1				2					
C14:0 2-OH									
C16:0 2-OH									
C18:0 2-OH				15		24	1		
C20:0 2-OH				1		1	3		
C22:0 2-OH	3	4		6		8	25		
C23:0 2-OH	1			5		6	17		
C24:0 2-OH	19	19		17		35	18		
C24:1 2-OH	10	9				17	7		
C25:0 2-OH				3		4			
C25:1 2-OH									
C26:0 2-OH									
C26:1 2-OH						2			
C16 cis 9,10 methylene									
C18 cis 9,10 methylene									
Others	6	0	1	0	5	3	2	3	3
Total	100	100	100	100	100	100	100	100	100

Typical Fatty Acid Composition of Natural Lipids Made by Matreya LLC (continued)

(actual composition may vary according to dietary history and growth condition of the source)

	Sphingomyelin (buttermilk)	Lactosyl ceramide (porcine)	Lactosyl ceramide (buttermilk)	Monosialoganglioside GM2	Monosialoganglioside GM3 (buttermilk)	Disialoganglioside GD3 (buttermilk)	Glucocerebrosides (buttermilk)	Glucocerebrosides (plant)
Catalog Number	**#1329**	**#1500**	**#1507**	**#1502**	**#1503**	**#1504**	**#1521**	**#1522**
Fatty Acids								
C14:0	1							
C16:0	14	14	12	2	6	8	7	
C16:1								
C18:0	3	6	1	82	1	1	2	
C18:1		4						
C18:2								
C18:3								
C20:0	1	1	1	7	1	1	1	
C20:1								
C20:4								
C21:0					1	2	1	
C22:0	26	9	25	4	23	24	27	
C22:1								
C22:6								
C23:0	30	1	36	trace	36	35	36	
C24:0	21	15	21	1	22	21	23	
C24:1	3	5		2	3	3		
C25:0			1				1	
C25:1								
C26:0								
C26:1								
C27:0								
C27:1								
C14:0 2-OH								trace
C16:0 2-OH								79
C18:0 2-OH		trace						trace
C20:0 2-OH								
C22:0 2-OH		8						8
C23:0 2-OH								1
C24:0 2-OH		24						9
C24:1 2-OH		13						
C25:0 2-OH								
C25:1 2-OH								
C26:0 2-OH								
C26:1 2-OH								
C16 cis 9,10 methylene								
C18 cis 9,10 methylene								
Others	1	0	3	2	7	5	2	3
Total	100	100	100	100	100	100	100	100

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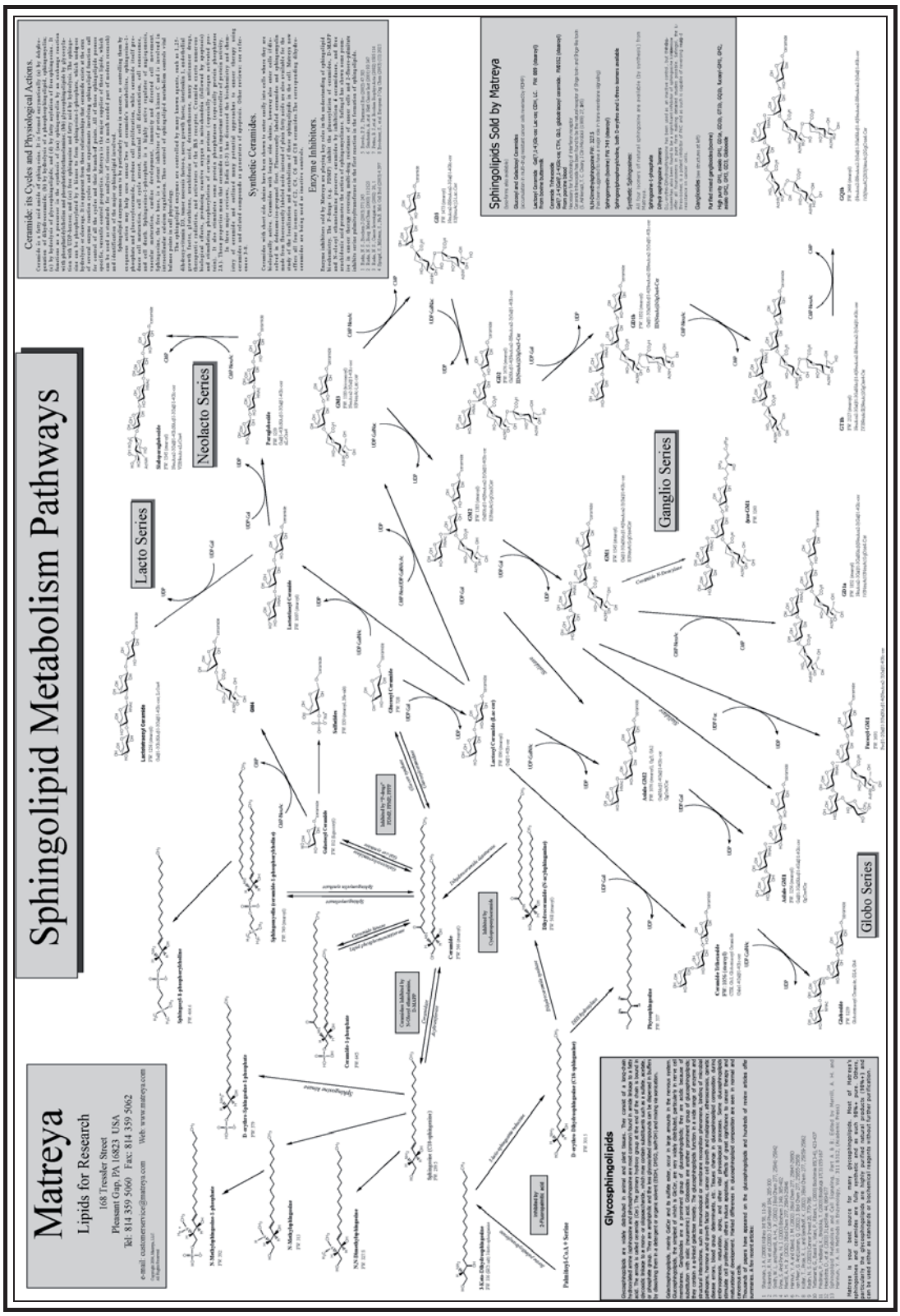

Sphingolipid Structures and Pathways Wall Chart

In a clear and straightforward manner, this wall chart indicates the structures and relationships between most commonly discussed sphingolipids. Full size copies (approximately 35 x 26 inches) are available on request to customer service.

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The information and data included in this catalog are correct and reliable to the best of our knowledge. However, we offer no guarantees and assume no responsibility for this information. No license or immunity under any patent is granted or implied through our sale of any material. Any information sent to us by the customer, relative to his or her interest in Matreya's products, must be submitted voluntarily and without obligation on the part of Matreya.

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