

MATREYA NEWSLETTER

FOR GLYCO/SPHINGOLIPID RESEARCH

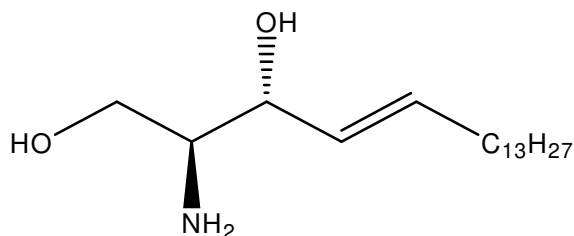
NOVEMBER 2009

Well-Defined Sphingosines for HPLC and MS Standards

Sphingosine is a very bioactive compound and exhibits a broad range of biological activities such as:

- i) cell proliferation
- ii) cell survival and migration
- iii) inhibits protein kinase C
- iv) phosphatidic acid phosphohydrolase

The most common member of sphingosine found in nature is (2S, 3R)-D-erythro-2-amino-1,3-octadec-4-enediol.



Synthetic D-erythro-sphingosine has a well-defined 18 carbon backbone. Matreya offers the following sphingoid bases with well-defined chain length.

Cat. No.	Name	Amount
1837	D-erythro-C10-sphingosine (Sphingosine with a total of 10 carbons)	5 mg/ml 1 ml
1838	D-erythro-C12-sphingosine (Sphingosine with a total of 12 carbons)	5 mg
1833	D-erythro-C14-sphingosine (Sphingosine with a total of 14 carbons)	5 mg
1835	D-erythro-C16-sphingosine (Sphingosine with a total of 16 carbons)	5 mg
1802	D-erythro-sphingosine (Sphingosine with a total of 18 carbons) (most commonly found in nature)	25 mg
1840	D-erythro-C20-sphingosine (Sphingosine with a total of 20 carbons) (Ideal for HPLC & MS internal standards)	5 mg

From the above list, Matreya has sphingosines with varying chain length from C10-C20. Catalog No. 1840 would be an ideal standard for HPLC and Mass Spectrometric analysis.

References

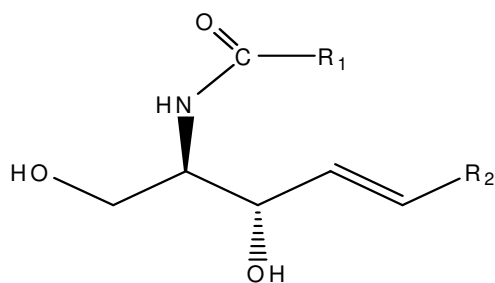
1. Kluk, M.J. et al. *Biochem Biophys Acta* 1582 72 (2002)
2. Ishii, I. et al. *Annual Reviews of Biochem.* 73 231 (2004)
3. Takuwa, Y. et al. *J. Biochemistry* 131 767 (2002)
4. Hannun, Y.A. et al. *Biochemistry* 40 (16) 4893 (2001)

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www.matreya.com
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Well-Defined Ceramides



With the everyday use of analytical instruments such as mass spectrometry and nuclear magnetic resonance, well-defined ceramides with known molecular weights are needed for accurate identification of unknown compounds. Matreya offers sphingosine bases of various chain lengths as well as sphingosine analogs such as dihydrosphingosine and phytosphingosine. In addition to the various chain lengths as well as sphingosines, Matreya offers a large selection of saturated and unsaturated fatty acids, hydroxy fatty acids, fluorescent fatty acids, and deuterated fatty acids. Matreya will be happy to combine any of our sphingosines with any of our fatty acids to synthesize pure ceramides with well-defined molecular weights.

Examples of Well-Defined Ceramides Offered by Matreya

N-Acetyl-D-erythro-sphingosine

$R_1 = \text{CH}_3$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 1901 10mg

N-Octadecanoyl-D-erythro-sphingosine

$R_1 = \text{C}_{17}\text{H}_{35}$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 1903 10mg

N-Hexanoyl-D-erythro-C8-sphingosine

$R_1 = \text{C}_5\text{H}_{11}$

$R_2 = \text{C}_3\text{H}_7$

Cat. No. 1856 1mg

N-(R,S)-alpha-Hydroxyoctadecanoyl-D-erythro-sphingosine

$R_1 = \text{C}_{17}\text{H}_{35}$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 2044 5mg

N-Octadecanoyl-D-erythro-dihydrosphingosine

$R_1 = \text{C}_{17}\text{H}_{35}$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 2041 10mg

* Dihydrosphingosine has a saturated sphingosine base

N-Stearoyl-phytosphingosine

$R_1 = \text{C}_{17}\text{H}_{35}$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 2034 5mg

* Phytosphingosine has a hydroxyl group on carbon 4 in place of the double bond

N-Hexanoyl-NBD-D-erythro-sphingosine

$R_1 = \text{C}_5\text{H}_{11}\text{NBD}$

$R_2 = \text{C}_{13}\text{H}_{27}$

Cat. No. 1841 100µg

N-Dodecanoyl-NBD-D-erythro-sphingosine

$R_1 = \text{C}_{11}\text{H}_{23}\text{NBD}$

$R_2 = \text{C}_{13}\text{H}_{27}$

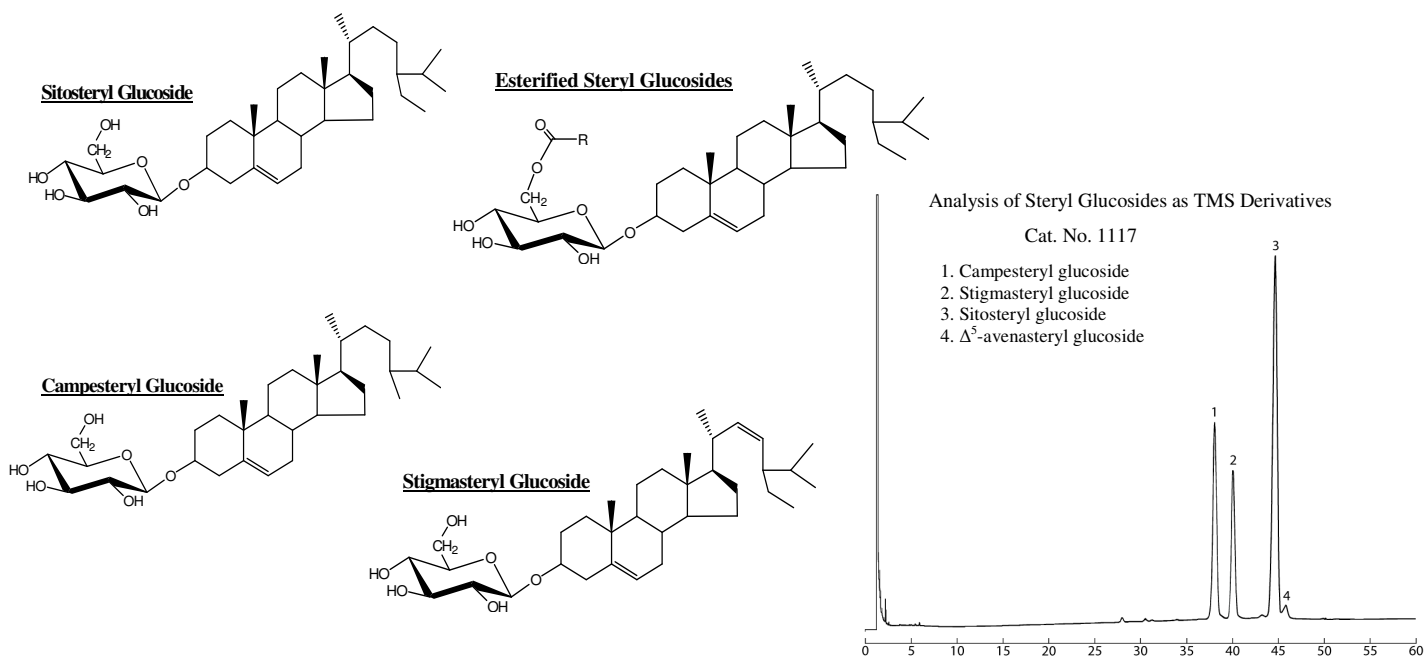
Cat. No. 1618 100µg

There are a wide variety of ceramides that exert numerous biological effects on cell processes causing many unusual ceramides to be investigated¹. Matreya's Custom Synthesis team will be happy to synthesize any ceramide or deuterated ceramides for your research needs. Please call (800)342-3595 or send e-mail request to: rdcustomsynthesis@matreya.com

1. "Use of short chain ceramides" C.Luberto and Y. A. Hannun *Methods in Enzymology* Vol. 312, p. 407
Ed. By A. H. Merrill Jr., and Y. A. Hannun, Academic Press

Biodiesels & Phytosterols

Although good for the heart due to their ability to clean out arteries, phytosterols have become a problem in the field of biodiesels because of their tendency to clog fuel filters. Phytosterols (also called plant sterols) are a group of steroid alcohols, which occur in the free sterol form as well as in the glycosylated form. The glycosylated sterols are often esterified with fatty acids. During the production of biodiesel fuels, esterified steryl glucosides are saponified to steryl glucosides. Steryl glucosides are less soluble in biodiesel than the esterified steryl glucosides and therefore precipitate out of the biodiesel, clogging the fuel line filters¹. The identification and quantification² of steryl glucosides remains an important area in the development of biodiesel fuels.



GC Conditions: Column: Rtx-5 15m x 0.25mm x 0.25u, Injector: 290°C, Detector: 340°C, Oven: 310°C

Derivatization Procedure: 1. Weigh 2-3mg of steryl glucoside into 4mL vial. 2. Add 0.5mL of pyridine and 0.5mL of BSTFA + 1% TMCS. 3. Place in a heating block at 60°C for 30 minutes. 4. Sample is ready to analyze by GC.

Matreya is offering the following plant sterols and steryl glucosides for your research:

Cat. No. 1119 Plant sterol mix 25mg/ml 1 ml

(This is a qualitative mixture containing: brassicasterol (13%), campesterol (26%), stigmasterol (7%), β-sitosterol (53%) in order of elution)

Cat. No. 1123 Plant sterols kit 1 kit

(Kit contains in individual packages: Steryl glucosides 5mg, Esterified steryl glucosides 2mg, Plant sterol mixture 25mg, β-Sitosterol (55%) 100mg, Desmosterol (90%) 2mg, Lanosterol (55%) 100mg, Stigmasterol 25mg, Ergosterol 25mg, Coprostanol 5mg, Cholestanol 100mg)

Cat. No. 1113 β-Sitostanol 50mg

Cat. No. 1117 Steryl glucosides 25mg

Cat. No. 1118 Esterified steryl glucosides 10mg

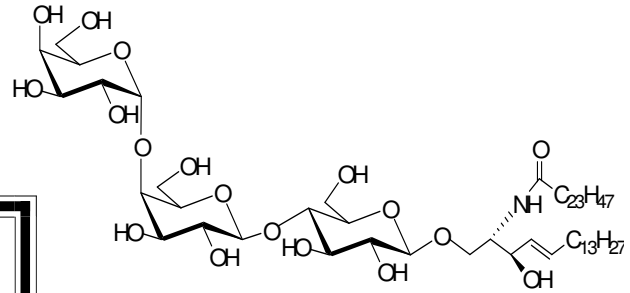
¹ "The Role of Sterol Glucosides on Filter Plugging" by I. Lee, L. Pfalzgraf, G. B. Poppe, Erica Powers, and Troy Haines in *Biodiesel Magazine*, April 2007

² "Analysis of steryl glucosides in foods and dietary supplements by solid phase extraction and gas chromatography" K. Phillips, D. Ruggio, M. Ashraf-Khorassani, *Journal of Food Lipids*, 12 (2005) 124-140

Featured Product

Ceramide Trihexosides

Cat. No. 1067 1 mg
1067-10 10 mg



Ceramide Trihexosides
5% OFF
CAT. NO. 1067 AND 1067-10 ONLY
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