



Complex Glycosphingolipids

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High-purity, complex glycosphingolipids

Glycosphingolipids, integral constituents of cell membranes, feature a sphingolipid backbone linked to a carbohydrate moiety. Comprising a diverse group of complex lipids, they assume a pivotal role in maintaining the structural integrity of the plasma membrane's outer leaflet. Their carbohydrate chains, ranging in composition and length, include sugars like glucose, galactose, and sialic acid. Functionally, glycosphingolipids are essential in cell recognition processes, facilitating communication critical for immune responses, development, and tissue differentiation. Additionally, they contribute to signal transduction as receptors for extracellular signaling molecules.

Cerebrosides, with a single sugar, gangliosides, with complex branched chains containing sialic acid, and globosides, found in non-neuronal tissues, represent distinct types of glycosphingolipids. Notably, glycosphingolipids influence blood group antigens on red blood cells and are associated with various diseases, particularly neurodegenerative disorders. The biosynthesis of glycosphingolipids occurs in the endoplasmic reticulum and Golgi apparatus, involving the sequential addition of sugar residues to the sphingolipid backbone. In summary, these molecules play multifaceted roles in cellular processes, emphasizing their significance in both physiological and pathological contexts.

Physiological and pathological relevance



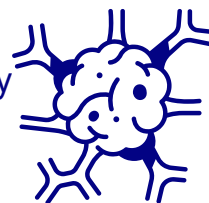
Neurodegenerative disorders.

Abnormalities in glycosphingolipid metabolism have been linked to neurodegenerative disorders.

Researchers are exploring the role of gangliosides, a type of glycosphingolipid abundant in the nervous system, in the pathogenesis of conditions like Alzheimer's and Parkinson's disease.

Cancer

Glycosphingolipids, particularly gangliosides, are implicated in cancer progression and metastasis. Studies focus on understanding how these lipids influence signaling pathways that contribute to the aggressive behavior of cancer cells. Targeting glycosphingolipids is also explored as a potential therapeutic strategy.



Blood group determination

Understanding glycosphingolipids' role in blood group antigen

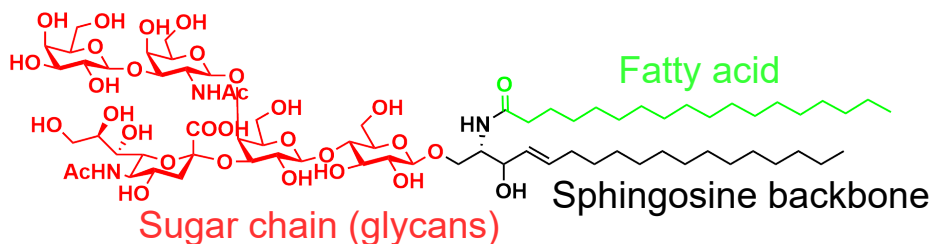
expression is crucial for blood transfusions and organ transplantation. Research aims to enhance compatibility and reduce the risk of complications in these medical procedures.

Biomarkers

Changes in glycosphingolipid profiles are being explored as potential biomarkers for disease diagnosis and prognosis. Detecting alterations in these lipids could aid in the early identification of certain conditions.



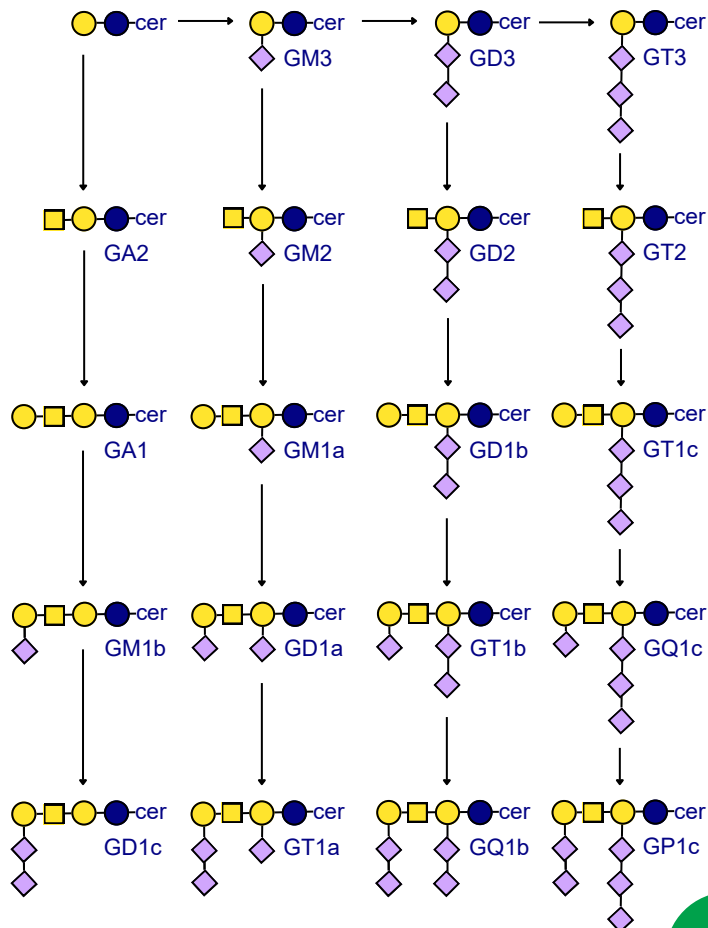
Anatomy of a complex glycosphingolipid



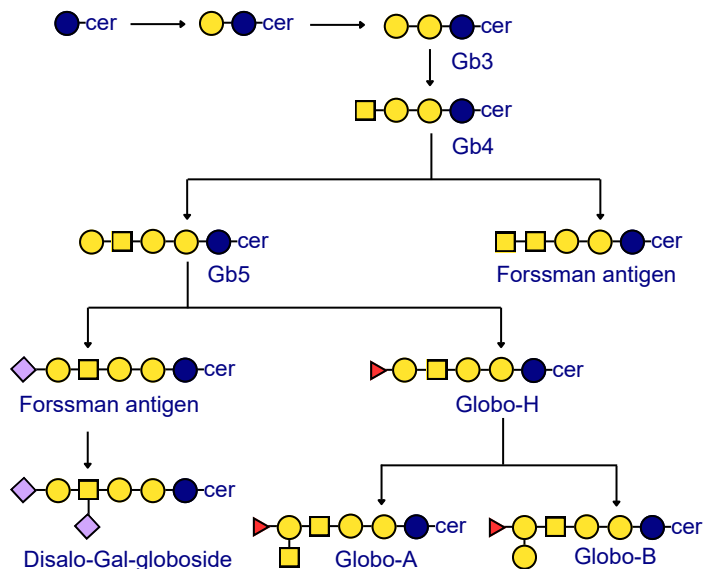
Glycan symbol nomenclature

Shape	Generic	Blue	Yellow	Purple	Light Blue	Red
Filled Circle	Hexose	Glc	Gal	All	Tal	
Filled Square	HexNAc	GlcNAc	GalNAc	AllNAc	TalNAc	
Filled Triangle	Deoxyhexose	Qui			6dTal	Fuc
Filled Diamond	3-deoxy-nonulosonic acids			Neu5Ac	Neu5Gc	Sia

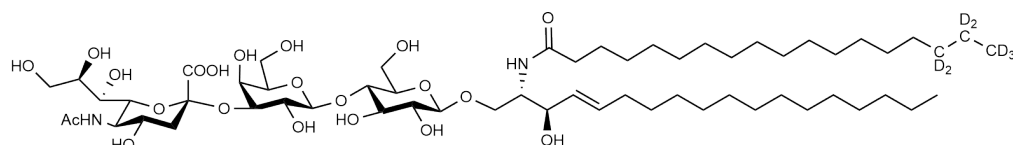
Ganglioside series



Globoside series

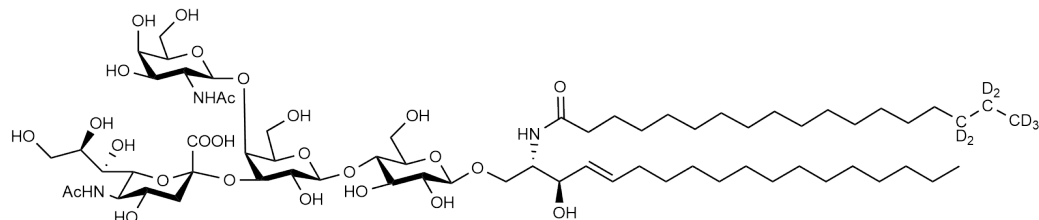


C18:0-d7 GM3 ceramide (d18:1/18:0-d7)



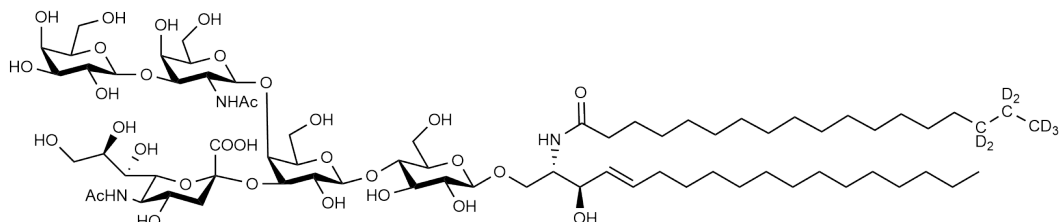
Product Number: 860122
Molecular Weight: 1188.55
Purity: >97%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

C18:0-d7 GM2 ceramide (d18:1/18:0-d7)



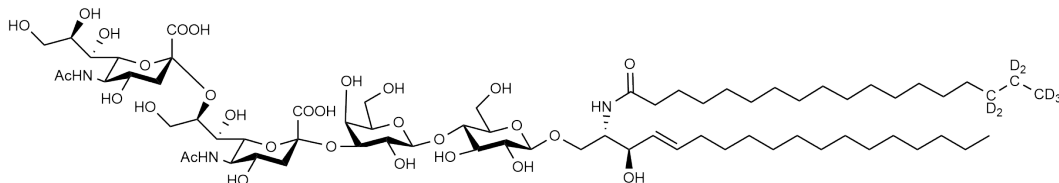
Product Number: 860121
Molecular Weight: 1391.74
Purity: >97%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

C18:0-d7 GM1 ceramide (d18:1/18:0-d7)



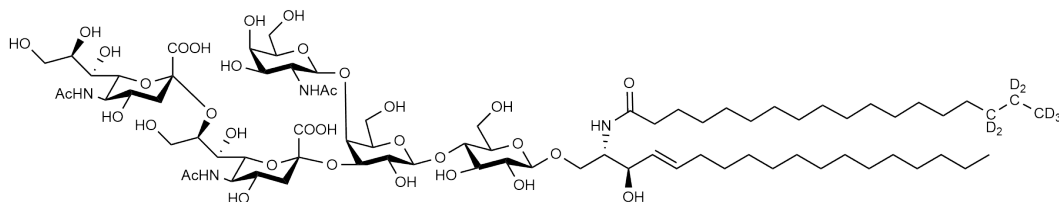
Product Number: 860120
Molecular Weight: 1553.88
Purity: >97%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

C18:0-d7 GD3 ceramide (d18:1/18:0-d7)



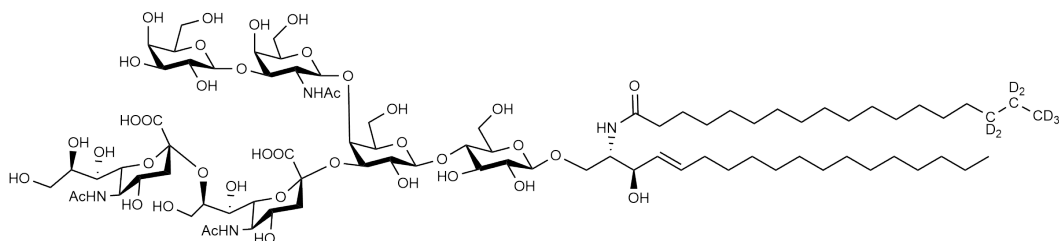
Product Number: 860123
Molecular Weight: 1479.80
Purity: >97%
Package Size: 100 µg
Physical State: Methanol Soln.
Availability: Now Available!

C18:0-d7 GD2 ceramide (d18:1/18:0-d7)

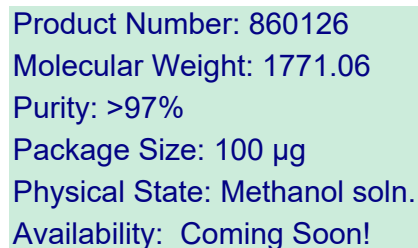


Product Number: 860124
Molecular Weight: 1683.00
Purity: >97%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

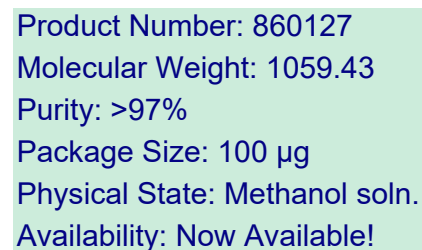
C18:0-d7 GD1b ceramide (d18:1/18:0-d7)



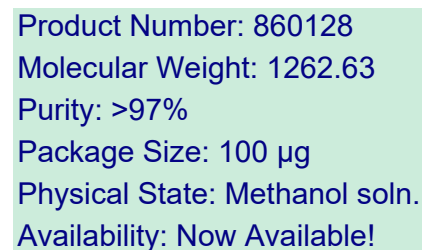
Product Number: 860125
Molecular Weight: 1845.14
Purity: >97%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!



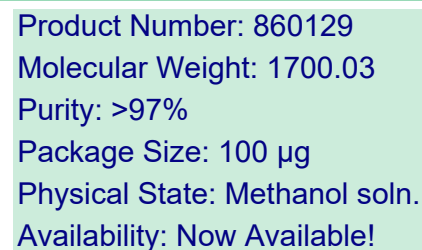
C18:0-d7 GB3 ceramide (d18:1/18:0-d7)



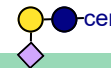
C18:0-d7 GB4 ceramide (d18:1/18:0-d7)



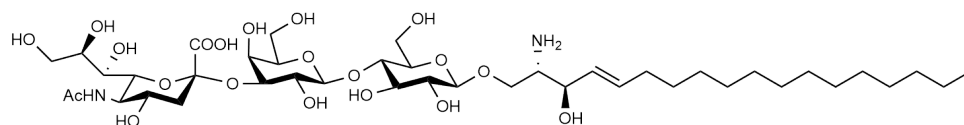
C18:0-d7 Fuc-GM1 ceramide (d18:1/18:0-d7)



GM3 Derivatives

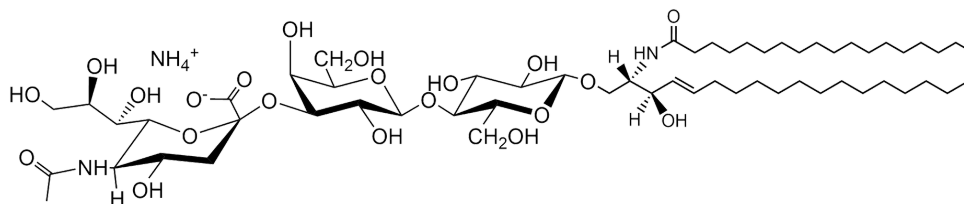


GM3 sphingosine (d18:1)



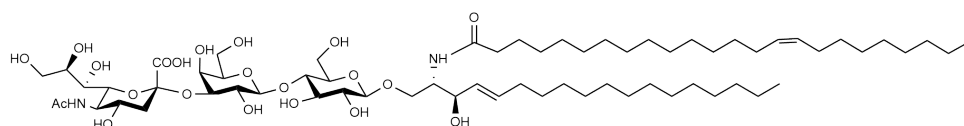
Product Number: 860132
Molecular Weight: 915.04
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

C18:0 GM3 ceramide (d18:1/18:0)



Product Number: 860074
Molecular Weight: 1198.52
Purity: >99%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

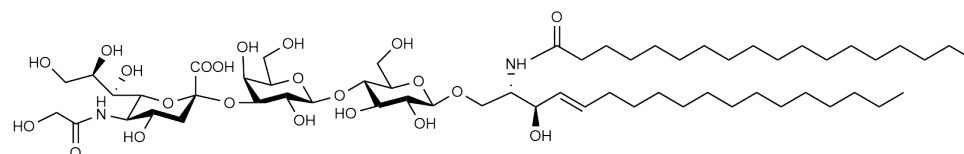
C24:1 GM3 ceramide (d18:1/24:1)



Product Number: 860168
Molecular Weight: 1263.65
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

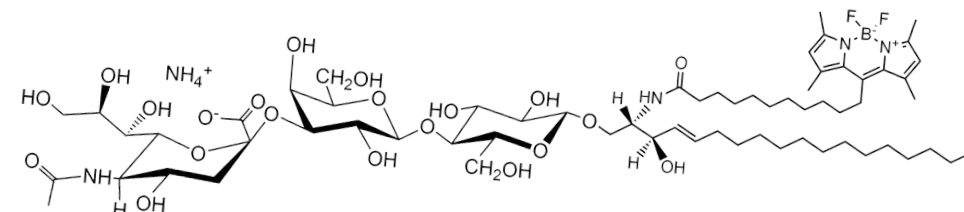
GM3 Derivatives - Modified

C18:0 GM3(Neu5Gc) ceramide (d18:1/18:0)



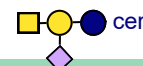
Product Number: 860156
Molecular Weight: 1197.51
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

C11:0 (11-TopFluor®) GM3 ceramide (d18:1/11:0)

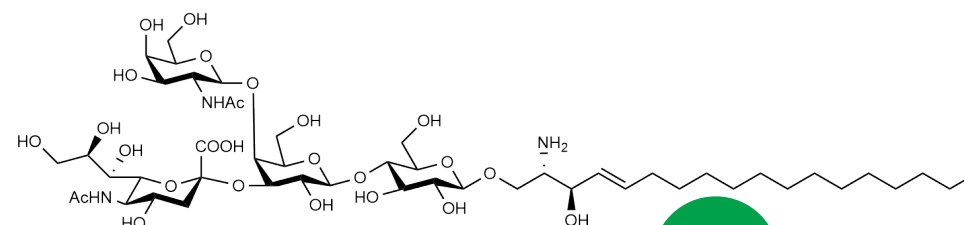


Product Number: 810258
Molecular Weight: 1346.40
Purity: >99%
Package Size: 100 µg
Physical State: Ethanol soln.
Availability: Now Available!

GM2 Derivatives

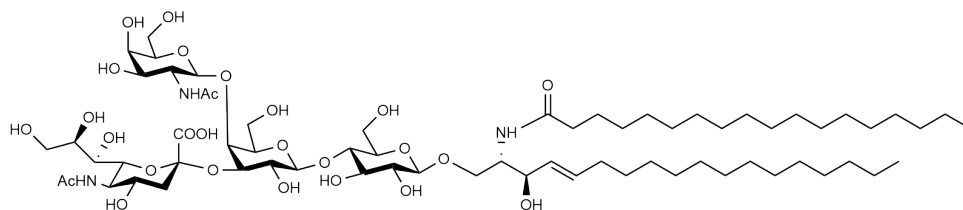


GM2 sphingosine (d18:1)



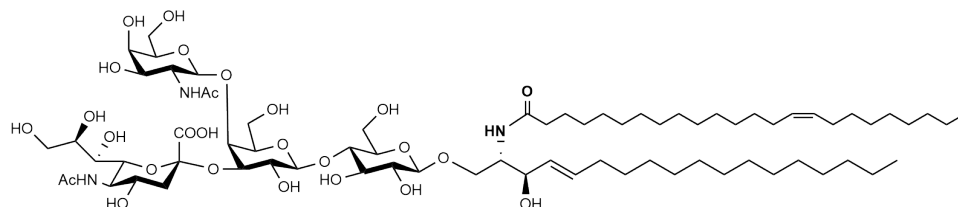
Product Number: 860131
Molecular Weight: 1118.23
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

C18:0 GM2 ceramide (d18:1/18:0)



Product Number: 860140
Molecular Weight: 1384.70
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

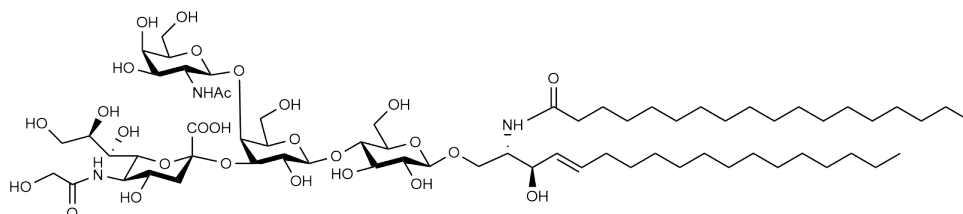
C24:1 GM2 ceramide (d18:1/24:1)



Product Number: 860141
Molecular Weight: 1466.85
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

GM2 Derivatives - Glycan Modified

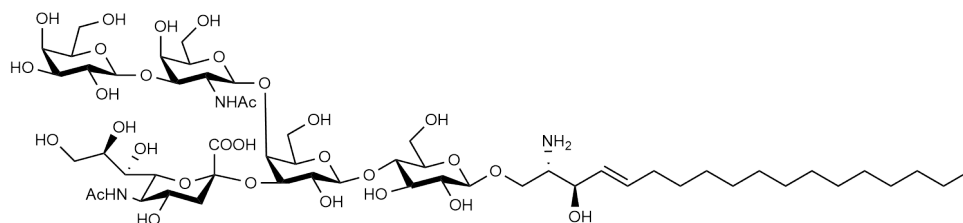
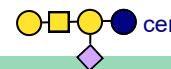
C18:0 GM1(Neu5Gc) ceramide (d18:1/18:0)



Product Number: 860157
Molecular Weight: 1400.70
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

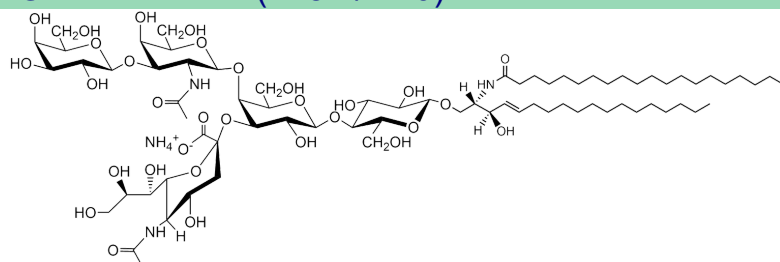
GM1 Derivatives

GM1 sphingosine (d18:1)



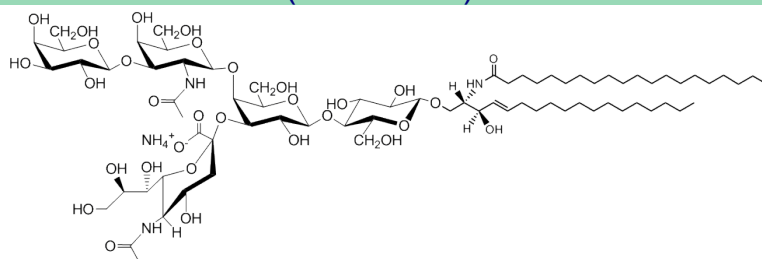
Product Number: 860130
Molecular Weight: 1280.37
Purity: >97%
Package Size: 1mg
Physical State: Powder
Availability: Now Available!

C17:0 GM1 ceramide (d18:1/17:0)



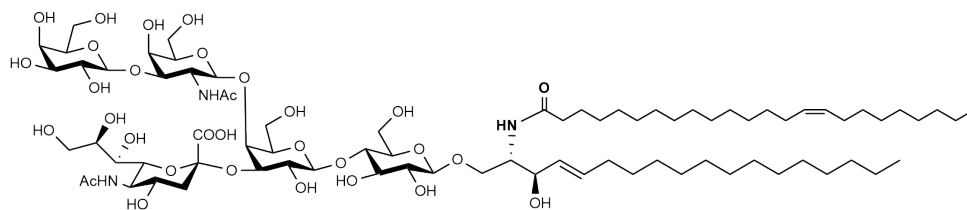
Product Number: 860094
Molecular Weight: 1548.85
Purity: >99%
Package Size: 100 µg
Physical State: Powder
Availability: Now Available!

C20:0 GM1 ceramide (d18:1/20:0)



Product Number: 860088
Molecular Weight: 1591.93
Purity: >97%
Package Size: 100 µg
Physical State: Powder
Availability: Now Available!

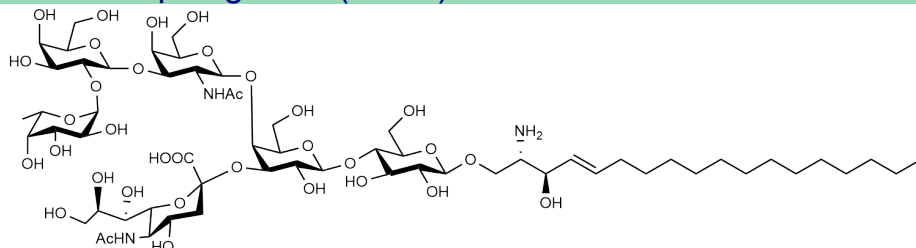
C24:1 GM1 ceramide (d18:1/24:1)



Product Number: 860142
Molecular Weight: 1628.99
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

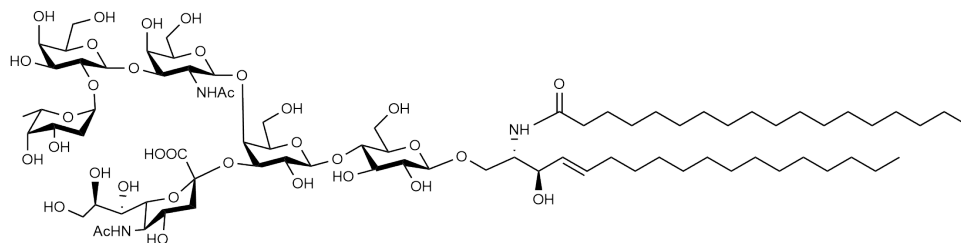
GM1 Derivatives - Glycan Modified

Fuc-GM1 sphingosine (d18:1)



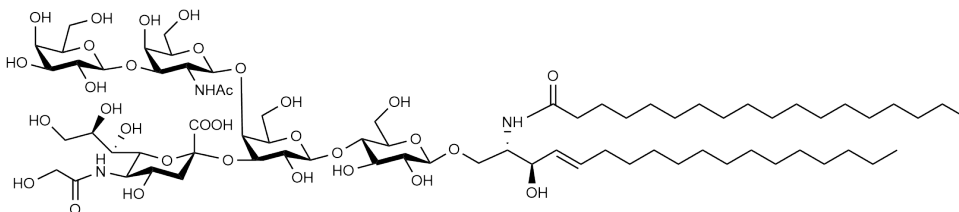
Product Number: 860139
Molecular Weight: 1426.51
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

C18:0 Fuc-GM1 ceramide (d18:1/18:0)



Product Number: 860143
Molecular Weight: 1692.98
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

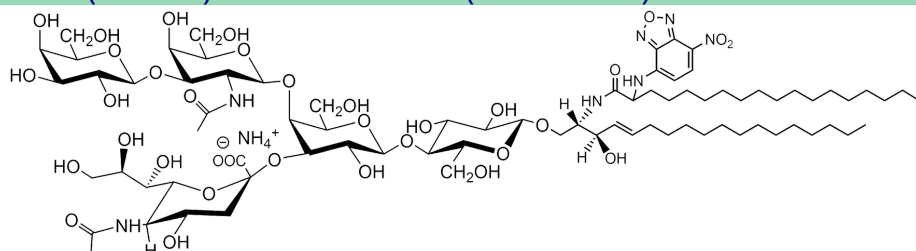
C18:0 GM1(Neu5Gc) ceramide (d18:1/18:0)



Product Number: 860158
Molecular Weight: 1562.84
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

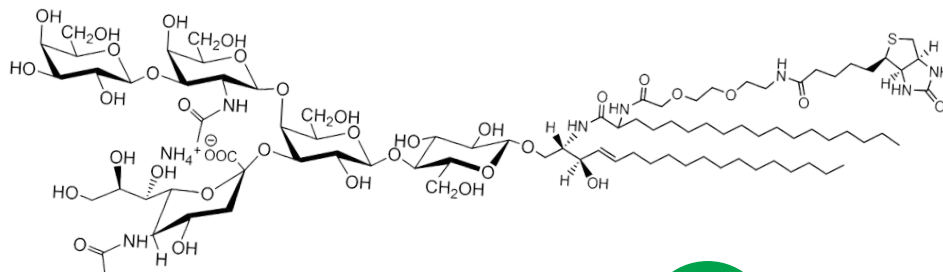
GM1 Derivatives - Fatty Acid Modified

C18:0 (2-NBD) GM1 ceramide (d18:1/18:0)



Product Number: 810170
Molecular Weight: 1741.98
Purity: >99%
Package Size: 500 µg
Physical State: Powder
Availability: Now Available!

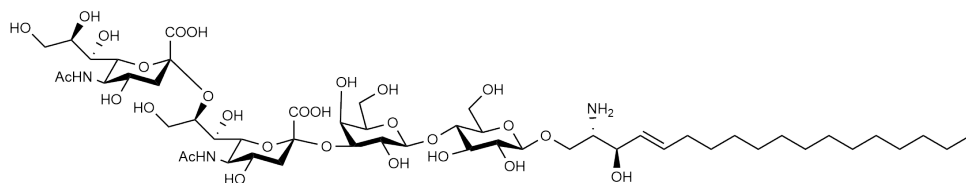
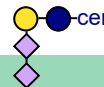
C18:0 (2-Biotin) GM1 ceramide (d18:1/18:0)



Product Number: 860097
Molecular Weight: 1950.34
Purity: >99%
Package Size: 100 µg
Physical State: Powder
Availability: Now Available!

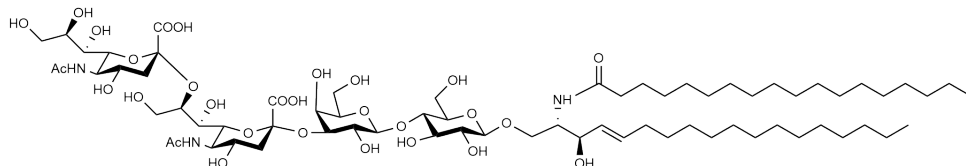
GD3 Derivatives

GD3 sphingosine (d18:1)



Product Number: 860133
Molecular Weight: 1206.29
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

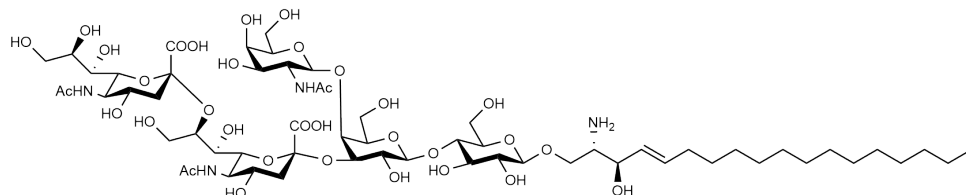
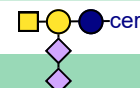
C18:0 GD3 ceramide (d18:1/18:0)



Product Number: 860144
Molecular Weight: 1472.76
Purity: >99%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

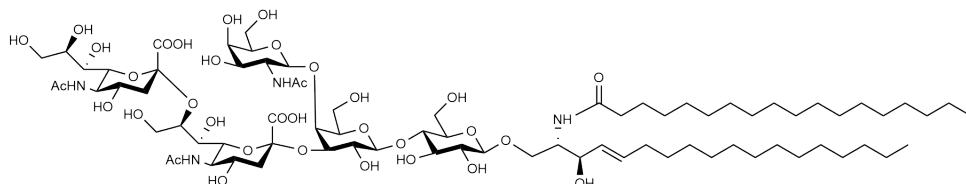
GD2 Derivatives

GD2 sphingosine (d18:1)



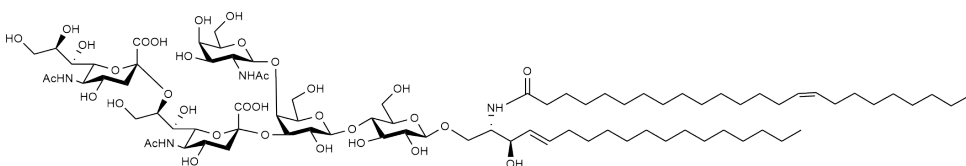
Product Number: 860134
Molecular Weight: 1409.49
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

C18:0 GD2 ceramide (d18:1/18:0)



Product Number: 860145
Molecular Weight: 1675.96
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

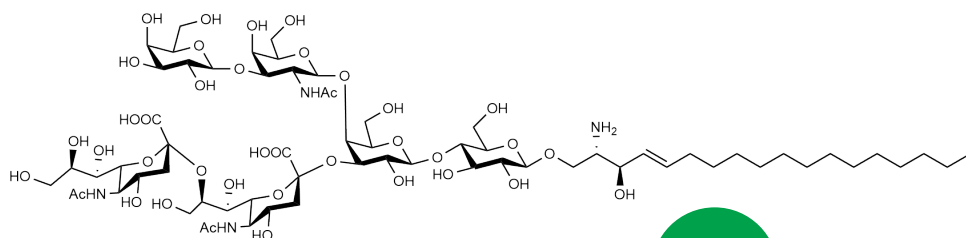
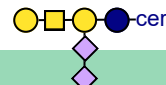
C24:1 GD2 ceramide (d18:1/24:1)



Product Number: 860163
Molecular Weight: 1758.10
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

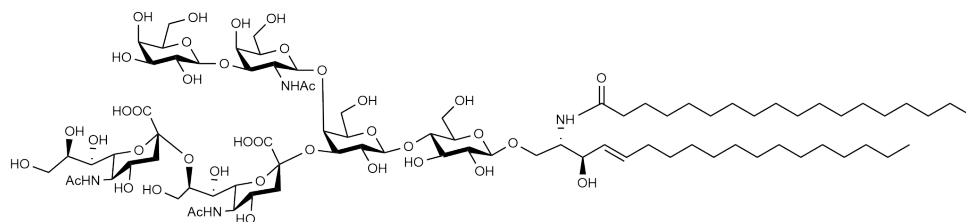
GD1b Derivatives

GD1b sphingosine (d18:1)

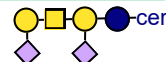


Product Number: 860135
Molecular Weight: 1571.63
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

C18:0 GD1b ceramide (d18:1/18:0)

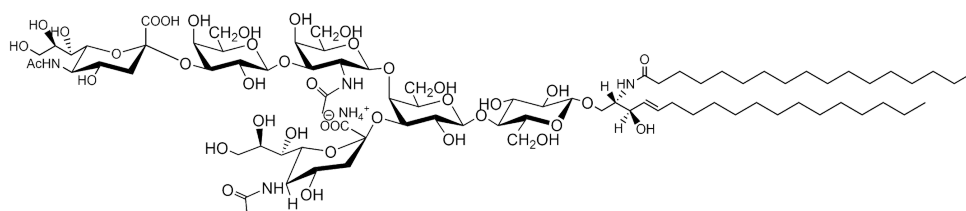


Product Number: 860146
Molecular Weight: 1838.10
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!



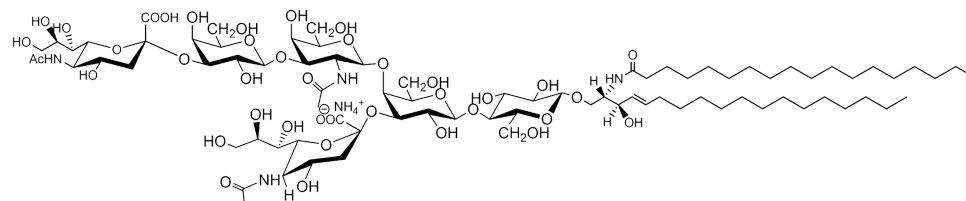
GD1a Derivatives

C17:0 GD1a ceramide (d18:1/17:0)



Product Number: 860075
Molecular Weight: 1841.08
Purity: >99%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

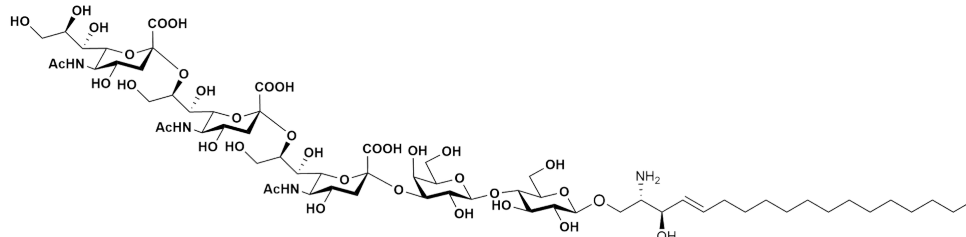
C18:0 GD1a ceramide (d18:1/18:0)



Product Number: 860091
Molecular Weight: 1872.16
Purity: >99%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

GT3 Derivatives

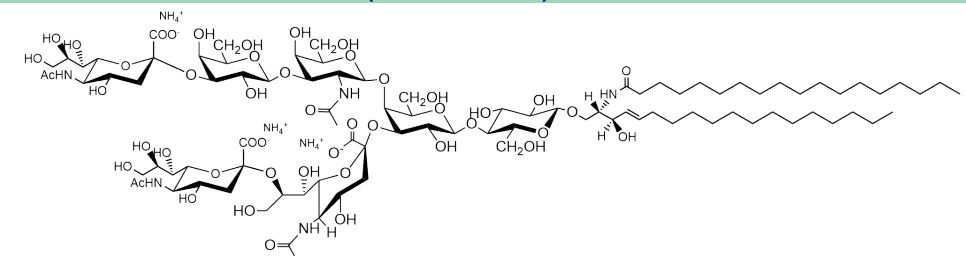
GT3 sphingosine (d18:1)



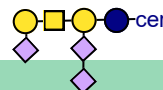
Product Number: 860136
Molecular Weight: 1497.55
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

GT1b Derivatives

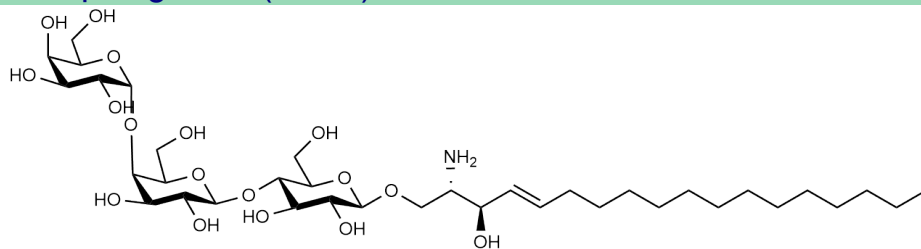
C18:0 GT1b ceramide (d18:1/18:0)



Product Number: 860089
Molecular Weight: 2180.45
Purity: >99%
Package Size: 100 µg
Physical State: Methanol soln.
Availability: Now Available!

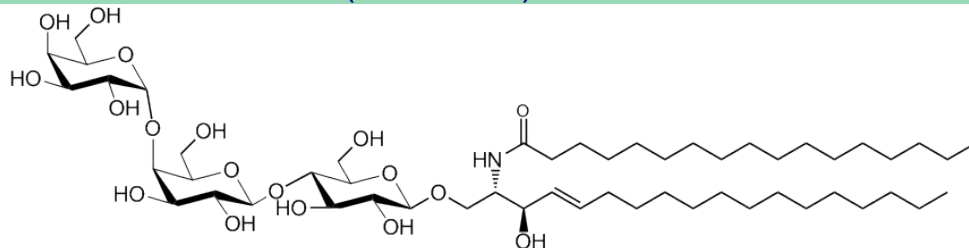


GB3 sphingosine (d18:1)



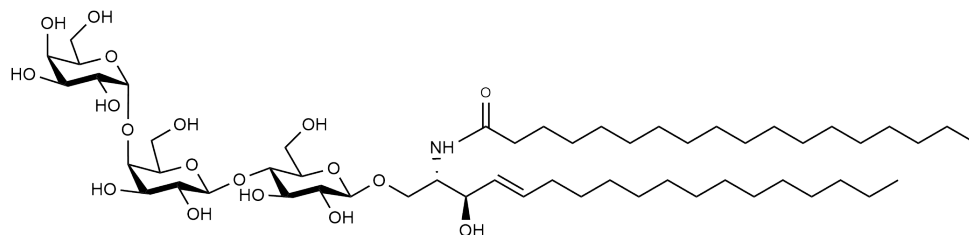
Product Number: 860137
 Molecular Weight: 785.92
 Purity: >97%
 Package Size: 1 mg
 Physical State: Powder
 Availability: Coming Soon!

C17:0 GB3 ceramide (d18:1/17:0)



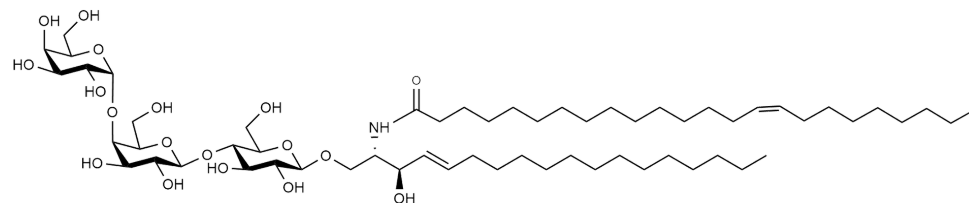
Product Number: 860699
 Molecular Weight: 1038.36
 Purity: >99%
 Package Size: 500 µg
 Physical State: Powder
 Availability: Now Available!

C18:0 GB3 ceramide (d18:1/18:0)



Product Number: 860147
 Molecular Weight: 1052.39
 Purity: >97%
 Package Size: 1 mg
 Physical State: Powder
 Availability: Now Available!

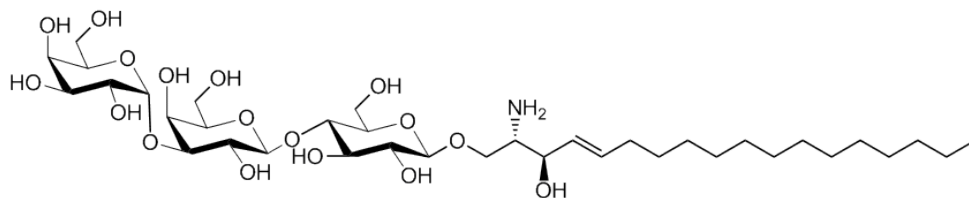
C24:1 GB3 ceramide (d18:1/24:1)



Product Number: 860167
 Molecular Weight: 1134.54
 Purity: >97%
 Package Size: 1 mg
 Physical State: Powder
 Availability: Coming Soon!

iGB3 Derivatives

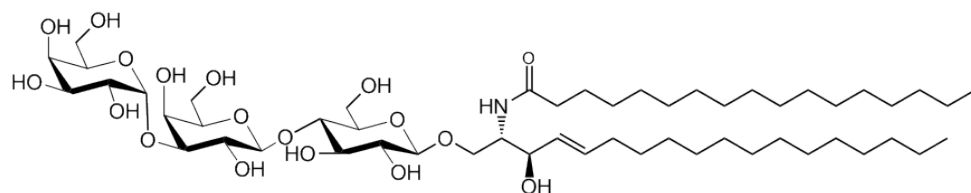
iGB3 sphingosine (d18:1)



Product Number: 860720
 Molecular Weight: 785.91
 Purity: >97%
 Package Size: 500 µg
 Physical State: Powder
 Availability: Now Available!

Can't find what you're looking for? Let us know at
avanti.customsynthesis@avantilipids.com

C17:0 iGB3 ceramide (d18:1/17:0)

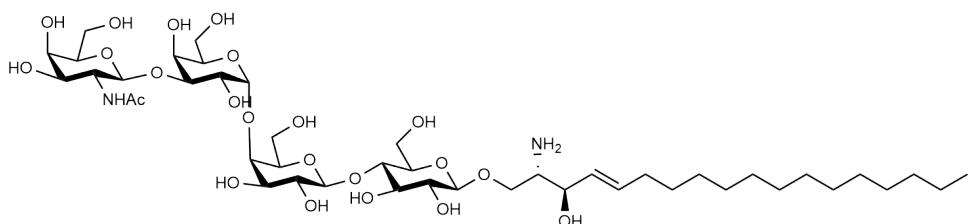


Product Number: 860722
Molecular Weight: 1038.35
Purity: >99%
Package Size: 500 µg
Physical State: Powder
Availability: Now Available!

GB4 Derivatives

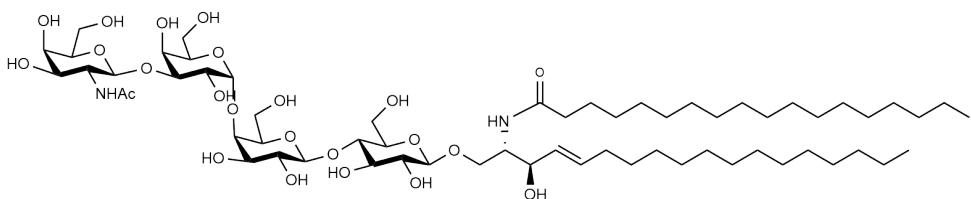


GB4 sphingosine (d18:1)



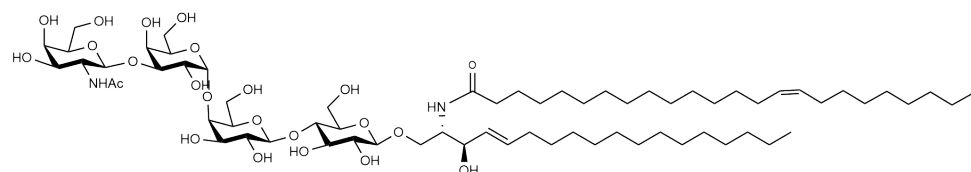
Product Number: 860138
Molecular Weight: 989.12
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

C18:0 GB4 ceramide (d18:1/18:0)



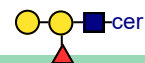
Product Number: 860150
Molecular Weight: 1255.59
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

C24:1 GB4 ceramide (d18:1/24:1)

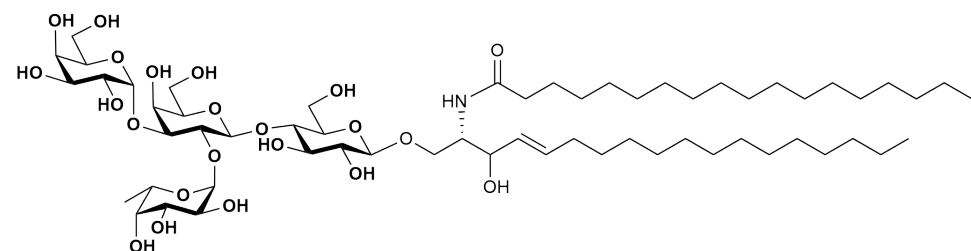


Product Number: 860166
Molecular Weight: 1337.73
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

B-Antigen Derivatives



C18:0 B-Antigen ceramide (d18:1/18:0)

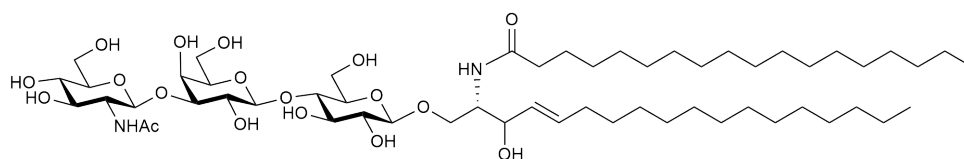


Product Number: 860155
Molecular Weight: 1198.53
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Now Available!

Lc3 Derivatives



C18:0 Lc3 ceramide (d18:1/18:0)

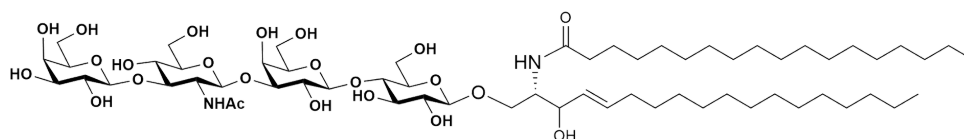


Product Number: 860164
Molecular Weight: 1093.44
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

Lc4 Derivatives



C18:0 Lc4 ceramide (d18:1/18:0)



Product Number: 860165
Molecular Weight: 1255.59
Purity: >97%
Package Size: 1 mg
Physical State: Powder
Availability: Coming Soon!

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