Chemily Glycoscience

Product Catalog
2017 – 2018

Chemily Glycoscience

Chemily Glycoscience

Chemily is a research, development, and consulting company dedicated to advancing **Glycoscience**. We specialize in **carbohydrate-based biochemicals**, **reagents** and **pharmaceuticals**, and have been manufacturing several categories of products using our proprietary chemo-enzymatic and *in vivo* bioengineering technology. Our products include:

- **Glyco-related enzymes: glycosyltransferases, glycosidases, sugar nucleotide biosynthesized enzymes**
- **Sugar nucleotides and their derivatives**
- **Structure-defined oligosaccharides: *N*-Glycan, HMO, H, L, and TE**
- **Carbohydrate-based pharmaceuticals and glycoprotein vaccines**

** Bulk quantities are available upon request.*

We also offer a wide range of **glycomics and proteomics' services**. We utilize state-of-the-art mass spectrometry instrumentation and workflows to provide protein / glycan analysis. Our team, with years of experience, will provide reliable results to facilitate your research, and we hope to be your first choice when you are seeking a partner to accelerate your projects. Our services include:

- **Protein identification (Protein ID)**
- **Global proteomic profiling**
- **Global profiling of *N*-linked glycosylation sites**
- **Global glycomic profiling**
- **Glycoprotein analysis**

We look forward to working with you on your future research needs!

58 Edgewood Ave.
Atlanta, GA, 30303
United States

www.chemilyglycoscience.com
sales@chemilyus.com
Tel: +1-(404)413-3557

Glycoenzymes

Glycosyltransferases (GTs)

The majority of GTs are Leloir-type enzymes, and utilize nucleotide sugars as their substrate for adding sugar residues to substrate glycoproteins and growing polysaccharides. While nucleotide sugars are locked in their anomeric state, GTs will either retain or invert the anomeric configuration of the sugar, depending on the mechanism of the transferase reaction it employs. For example, an inverting GT will add UDP-α-D-glucuronic acid to a substrate, forming a β glycosidic linkage. GTs have also been investigated for their ability to remove sugars from heterogeneous glycans and then add the sugar back to different glycans during glycoengineering.

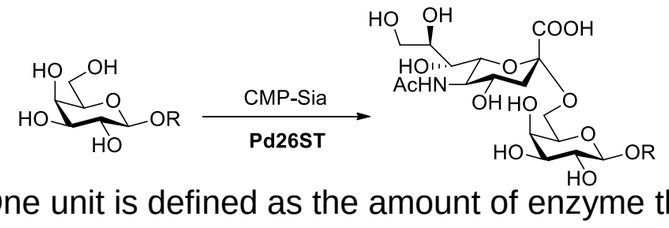
Sugar nucleotide enzymes

The enzymatic conversion of sugars into nucleotide sugars proceeds through *de novo* and salvage pathways *in vivo*. The *de novo* pathway generally starts with glucose, which is then systematically converted into a closely related family of sugars, such as glucuronic acid and galactose, in a multi-step sequence. Conversely, the salvage pathway generally employs a two step sequence, first phosphorylating the sugar, and then adding the appropriate nucleotide. Promiscuity in salvage pathway enzymes permits some sugar derivatives (e.g. azido sugars) to be converted into nucleotide sugars.

EN01001 α2,6-sialyltransferase; Pd26ST

E.C.: 2.4.99.1

E. coli recombinant α2,6-sialyltransferase from *Photobacterium damsel*



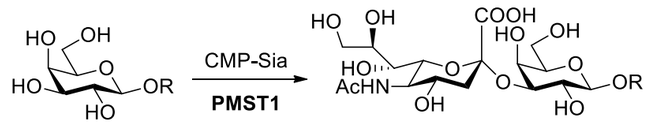
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Siaα2,6Lac from CMP-Sia and lactose per minute at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01002 α2,3-sialyltransferase; PmST1

E.C.: 2.4.99.4

E. coli recombinant α2,3-sialyltransferase from *Pasteurella multocida (P-1059)*



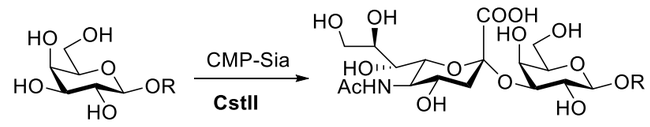
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Siaα2,3Lac from CMP-Sia and lactose per minute at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01003 α2,8-sialyltransferase; CstII

E.C.: 2.4.99.8

E. coli recombinant α2,8-sialyltransferase from *Campylobacter jejuni*



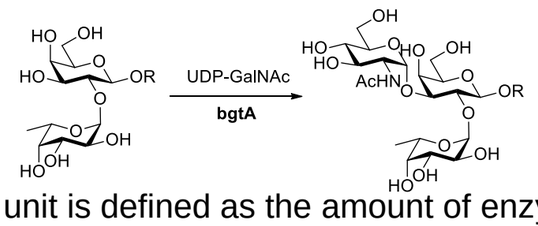
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Siaα2,3Lac from CMP-Sia and lactose per minute at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01004 α1,3-galactosaminyltransferase; BgtA

E.C.: 2.4.1.40

E. coli recombinant α1,3-N-acetyl-galactosaminyltransferase from *Helicobacter mustelae*



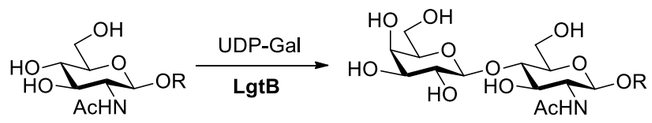
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol GalNAcα1,3 (Fucα1,2)Gal from Fucα1,2Gal per min at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01005 β1,4-galactosyltransferase; LgtB

E.C.: 2.4.1.90

E. coli recombinant β1,4-galactosyltransferase from *Neisseria meningitides*



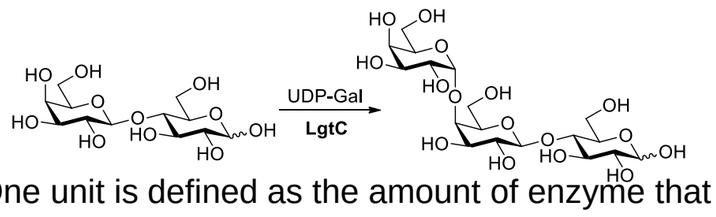
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Galβ1,4Glc NAc from UDP-Gal and GlcNAc per min at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01006 α1,4-galactosyltransferase; LgtC

E.C.: 2.4.1.228

E. coli recombinant α1,4-galactosyltransferase from *Neisseria meningitides*



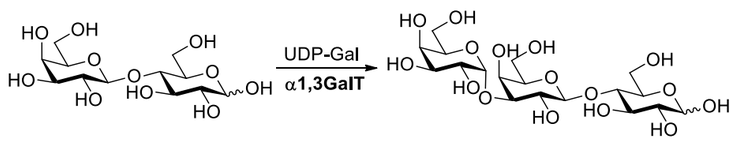
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Galα1,4Lac from UDP-Gal and Lactose per minute at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01007 α1,3-galactosyltransferase; α1,3GalT

E.C.: 2.4.1.87

E. coli recombinant α1,3-galactosyltransferase from bovine



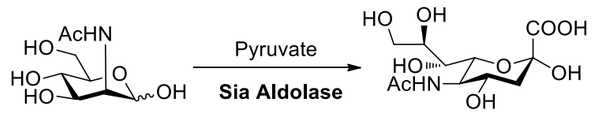
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Galα1,3Lac from UDP-Gal and lactose per minute at 37 ºC.

Package: 1 U, 5 U, 25 U

EN01008 Sialic acid aldolase; NPL

E.C.: 4.1.3.3

E. coli recombinant sialic acid aldolase from *E. coli* K-12 MG1655



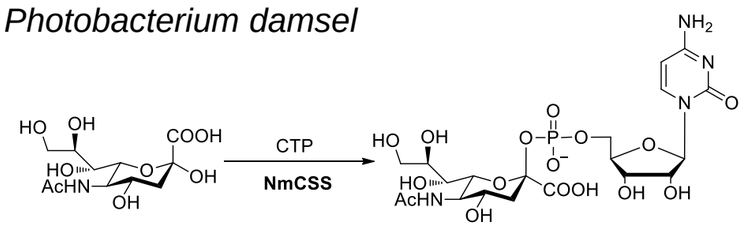
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Sia from ManNAc and pyruvate per minute at 37 ºC.

Package: 10 U, 50 U, 250 U

EN01009 CMP-sialic acid synthetase; NmCSS

E.C.: 2.7.7.43

E. coli recombinant α2,6sialyltransferase from *Photobacterium damsel*



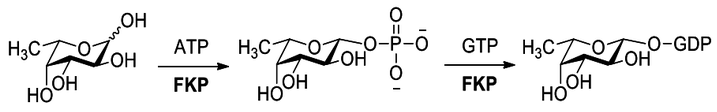
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol CMP-Sia from sialic acid and CTP per minute at 37 ºC.

Package: 10 U, 50 U, 100 U

EN01010 L-fucokinase/GDP-fucose pyrophosphorylase; FKP

E.C.: 2.7.1.52/2.7.7.30

E. coli recombinant L-fucokinase/GDP-fucose pyrophosphorylase from *Bacteroides fragilis*



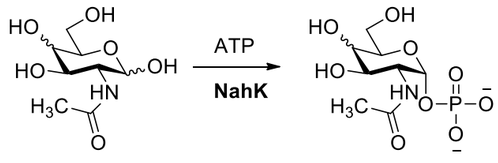
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Fuc-1-P from L-Fuc and ATP per minute at 37 ºC.

Package: 2 U, 10 U, 50 U

EN01011 *N*-acetylhexosamine kinase; NahK

E.C.: 2.7.1.162

E. coli recombinant *N*-acetylhexosamine kinase from *Bifidobacterium longum*



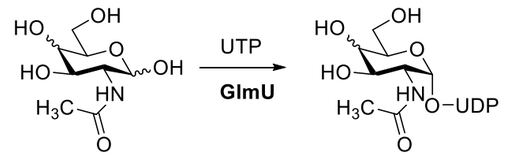
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of GlcNAc-1-P from GlcNAc and ATP per minute at 37 ºC.

Package: 5 U, 20 U, 100 U

EN01012 GlcNAc1-P Uridyltransferase (GlmU)

E.C.: 2.3.1.157

E. coli recombinant GlcNAc1-phosphate uridyltransferase from E. coli K-12 Truncated form



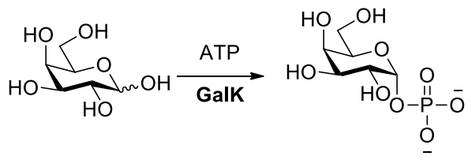
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-GlcNAc from GlcNAc-1-P and UTP per minute at 37 °C.

Package: 5 U, 20 U, 100 U

EN01013 Galactokinase; BiGalK

E.C.: 2.7.1.6

E. coli recombinant galactokinase from *Bifidobacterium infantis*



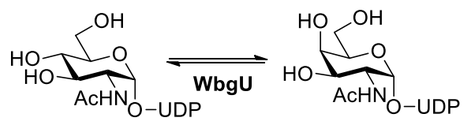
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Gal-1-P from galactose and ATP per minute at 37 ºC.

Package: 5 U, 20 U, 100 U

EN01014 UDP-GlcNAc 4-epimerase; WbgU

E.C.: 5.1.3.7

E. coli recombinant UDP-GlcNAc 4-epimerase from *Plesiomonas shigelloides* O17



One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-GalNAc from UDP-GlcNAc per minute at 37 ºC.

Package: 10 U, 50 U, 250 U

EN01015 UDP-Glc 4-epimerase; GalE

E.C.: 5.1.3.2

*E.coli r*ecombinant UDP-Glc 4-epimerase from *E. coli* K12

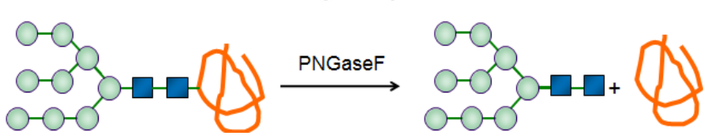
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-Gal from UDP-Glc per minute at 37 ºC.

Package: 10 U, 50 U, 250 U

EN01016 Glycopeptidase; PNGaseF

E.C.: 3.5.1.52

E. coli recombinant peptide-N4-(N-acetyl-β-glucosaminyl) asparagineamidase from *Flavobacterium meningosepticum*



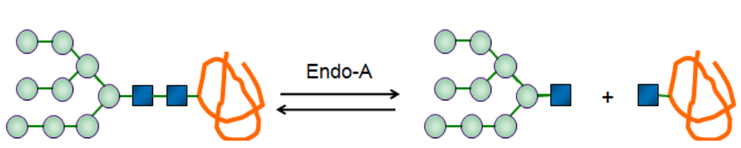
One unit is defined as the amount of enzyme that catalyzes the release of 1 nmol N-glycan from RNaseB per minute at 37 ºC.

Package: 100 U, 250 U, 500 U

EN01017 Endo-β-N-acetylglucosaminidase A; Endo-A

E.C.: 3.2.1.96

E. coli recombinant endo-β-N-acetylglucosa minidase from *Arthrobacter protophormia*



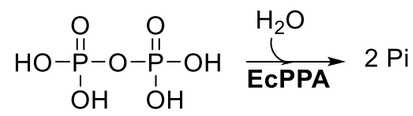
One unit is defined as the amount of enzyme that catalyzes the release of 1 nmol N-glycan from RNaseB per minute at 37 ºC.

Package: 200 U, 500 U, 1 KU

EN01018 Inorganic pyrophosphatase; PmPPA

E.C.: 3.6.1.1

E. coli recombinant inorganic pyrophosphatase from *Pasteurella multocida*



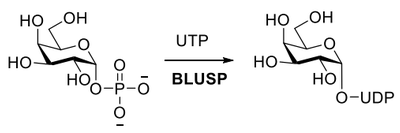
One unit is defined as the amount of enzyme that catalyzes the release of 2 μmol of phosphate from pyrophosphate per minute at 37 ºC.

Package: 1 KU, 2.5 KU, 5 KU

EN01019 UDP-sugar pyrophosphorylase; BlUSP

E.C.: 2.7.7.64

E. coli recombinant UDP-sugar pyrophosphory-lase from *Bifidobacterium longum*



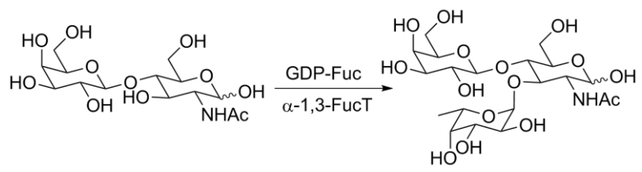
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-Gal from Gal-1-P and UTP per minute at 37 ºC.

Package: 5 U, 10 U, 25 U

EN01020 α-1,3-fucosyltransferase; α1,3FucT

E.C.: 2.4.1.65

E. coli recombinant α-1,3-fucosyltransferase from *Helicobacter pylori*



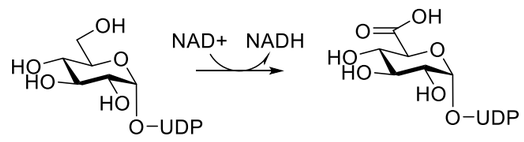
One unit is defined as the amount of enzyme that catalyzes the transfer of 1 μmol Fuc from GDP-Fuc to acceptor per minute at 37 ºC.

Package: 10 U, 50 U, 100 U

EN01021 UDP-Glc dehydrogenase; UDPDH

E.C.: 1.1.1.22

E. coli recombinant uridine-5-diphosphoglucose dehydrogenase from *Streptococcus pyogenes*



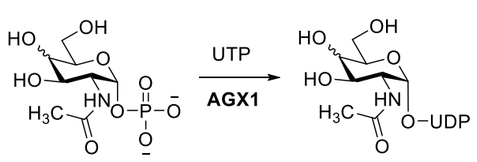
One unit will oxidize 1.0 μmole of UDP-glucose to UDP-glucuronic acid per minute at pH 8.7 at 25 °C.

Package: 1 U, 5 U, 10 U

EN01022 *N*-acetylglucosamine-1-P uridyltransferase; AGX1

E.C.: 2.3.1.157

E. coli recombinant *N*-acetylglucosamine-1-P uridyltransferase from *Homo sapien*



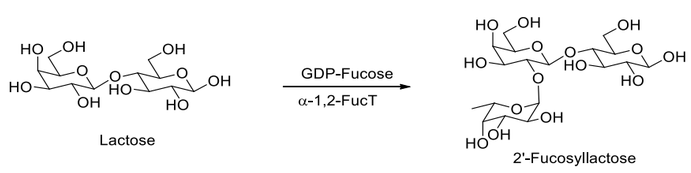
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-GlcNAc from GlcNAc-1-P and UTP per minute at 37 ºC.

Package: 5 U, 25 U, 50 U

EN01023 α1,2-fucosyltransferase; α1,2FucT

E.C.: 2.4.1.69

E. coli recombinant α1,2-fucosyltransferase from *Helicobacter mustelae*



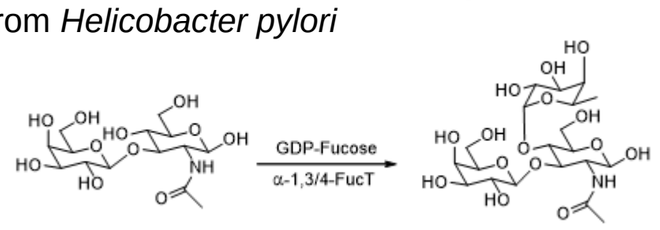
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Fucα1,2Lac from GDP-Fuc and lactose per minute at 37 ºC.

Package: 10 U, 50 U, 100 U

EN01024 α1,3/4-fucosyltransferase; α1,3/4FucT

E.C.: 2.4.1.65

E. coli recombinant α1,3/4-fucosyltransferase from *Helicobacter pylori*



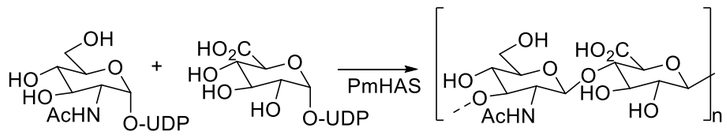
One unit is defined as the amount of enzyme that catalyzes the transfer of 1 μmol Fuc from GDP-Fuc to acceptor per minute at 37 ºC.

Package: 10 U, 50 U, 100 U

EN01025 Hyaluronan synthase; PmHAS

E.C.: 2.4.1.212

E. coli recombinant hyaluronan synthase from *Pasteurella multocida*



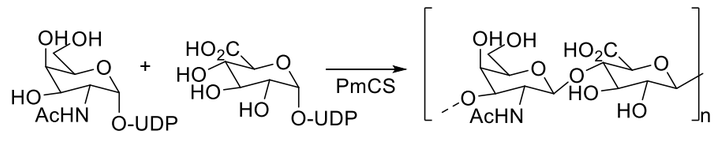
PmHAS polymerizes hyaluronan chain from UDP-GlcNAc and UDP-GlcA sugar nucleotide donors.

Package: 1 mg, 5 mg, 10 mg

EN01026 Chondroitin synthase; PmCS

E.C.: 2.4.1.226

E. coli recombinant chondroitin synthase from *Pasteurella multocida*



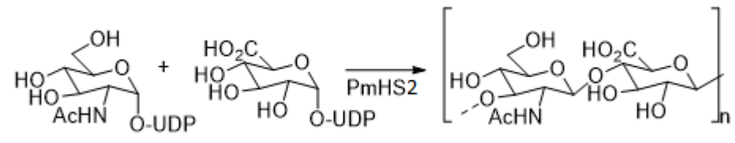
PmCS polymerizes chondroitin chain from UDP-GalNAc and UDP-GlcA sugar nucleotide donors.

Package: 1 mg, 5 mg, 10 mg

EN01027 Heparosan synthase 2; PmHS2

E.C.: 2.4.1.-

E. coli recombinant heparosan synthase from *Pasteurella multocida*



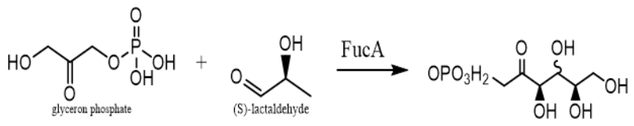
PmHS2 polymerizes heparosan chain from UDP-GlcNAc and UDP-GlcA sugar nucleotide donors.

Package: 1 mg, 5 mg, 10 mg

EN01028 L-fucolose-1-Phosphate aldolase; FucA

E.C.: 4.1.2.17

E. coli recombinant L-fuculose aldolase from *Thermus thermophilus HB8*



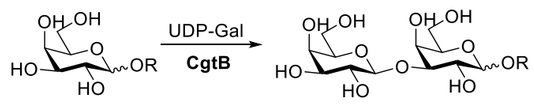
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of glycerone phosphate and (*S*)-lactaldehyde from L-fuculose 1-phosphate per minute at 37 ºC.

Package: 5 U, 10 U, 25 U

EN01029 β1,3-galactosyltransferase; CgtB

E.C.: 2.4.1.62

E. coli recombinant β1,3-galactosyltransferase from *Campylobacter jejuni*



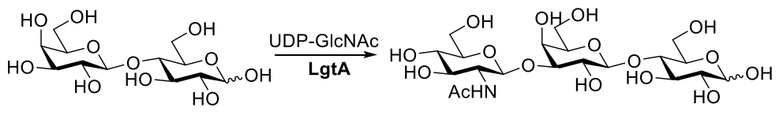
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol Galβ1,3Gal from Gal and UDP-Gal per min at 37 ºC.

Package: 1 U, 5 U, 10 U

EN01030 β1,3-*N*-acetylhexaminyltransferase; LgtA

E.C.: 2.4.1.56

E. coli recombinant β1,3-*N*-acetylhexosaminyl-transferase from *Neisseria meningitides*



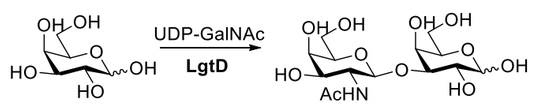
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of GlcNAcβ1,3Lac from UDP-GlcNAc and lactose per min at 37 ºC.

Package: 1 U, 5 U, 10 U

EN01031 β1,3-*N*-acetylgalactosaminyltransferase: LgtD

E.C.: 2.4.1.-

E. coli recombinant β1,3-*N*-acetylgalactosami-nyltransferase from *Neisseria meningitides*



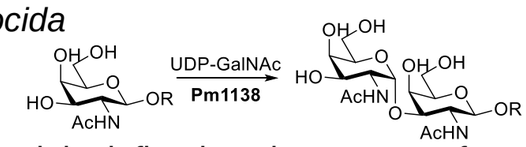
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of GalNAcβ1,3-Gal from UDP-GalNAc and Gal per min at 37 ºC.

Package: 1 U, 5 U, 10 U

EN01032 α1,3-*N*-acetylgalactosaminyltransferase; Pm1138

E.C.: 2.4.1.-

E. coli recombinant α1,3-*N*-acetylgalactosaminyltransferase from *Pasteurella multocida*



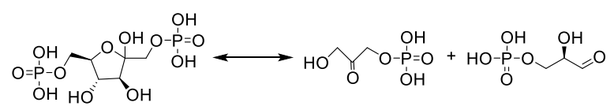
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol GalNAcα1,3-GalNAc from UDP-GalNAc and GalNAc per min at 37 ºC.

Package: 1 U, 5 U, 10 U

EN01033 Fructose 1,6-bisphosphate aldolase; SMALDO

E.C.: 4.1.2.13

E. coli recombinant fructose 1,6-bisphosphate aldolase from *E. coli O157:H7*



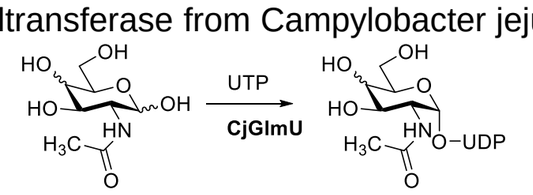
One unit is defined as the amount of enzyme that catalyzes the release of 1 μmol of DHAP and G3P from fructose 1,6-bisphosphate per minute at 37 ºC.

Package: 100 U, 500U, 1 KU

EN01034 GlcNAc1-P Uridyltransferase (CjGlmU)

E.C.: 2.3.1.157

E. coli recombinant GlcNAc1-phosphate uridyltransferase from Campylobacter jejuni



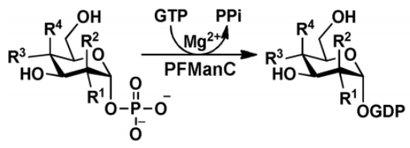
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-GlcNAc from GlcNAc-1-P and UTP per minute at 37 °C.

Package: 10 U, 25 U, 100 U

EN01035 GDP-mannose pyrophosphorylase; ManC

E.C.: 2.7.7.13

E. coli recombinant GDP-mannose pyrophosphorylase from *Pyrococcus furiosus*



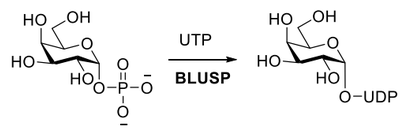
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of GDP-Man from Mannose-1-P and GTP per minute at 37 ºC.

Package: 10 U, 25 U, 50 U

EN01036 UDP-sugar pyrophosphorylase; AtUSP

E.C.: 2.7.7.64

E. coli recombinant UDP-sugar pyrophosphory-lase from *Arabidopsis thaliana*



One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of UDP-Gal from Gal-1-P and UTP per minute at 37 ºC.

Package: 10 U, 25 U, 100 U

EN01037 D-mannose isomerase

E.C.: 5.3.1.7

E. coli recombinant D-mannose isomerase from *E. coli* K12

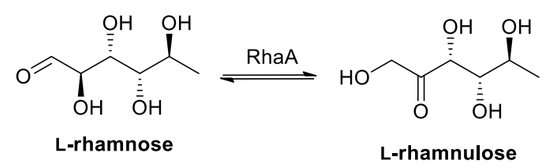
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of D-fructose from d-Mannose per minute at 37 ºC.

Package: 100 U, 1 KU, 5 KU

EN01038 L-rhamnose isomerase; RhaA

E.C.: 5.3.1.14

E. coli recombinant L-rhamnose isomerase from *E. coli* K12



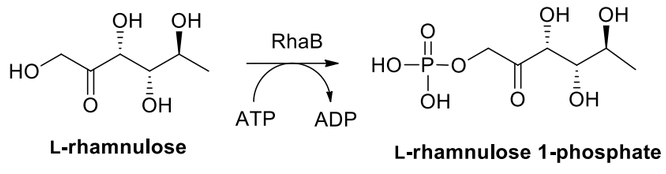
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-rhamunose from L-rhamnose per minute at 37 ºC.

Package: 5 U, 20 U, 100 U

EN01039 L-rhamnulose kinase; RhaB

E.C.: 2.7.1.5

E. coli recombinant L-rhamnulose kinase from *E.coli* K12



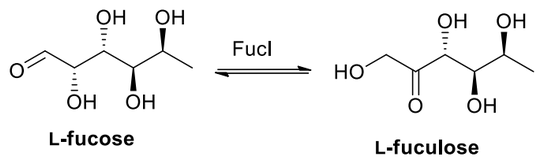
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-rhamnulose -1-phosphate from L-rhamnulose and ATP per minute at 37 ºC.

Package: 10 U, 50 U, 250 U

EN01040 L-fucose isomerase; FucI

E.C.: 5.3.1.25

E.coli recombinant L-fucose isomerase from *E. coli* K12



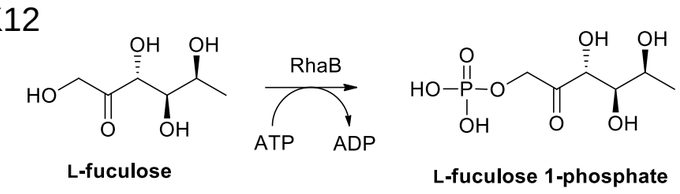
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-fuculose from L-fucose per minute at 37 ºC.

Package: 10 U, 50 U, 250 U

EN01041 L-fucose kinase; FucK

E.C.: 2.7.1.52

E. coli recombinant L-fuculose kinase from *E.coli* K12



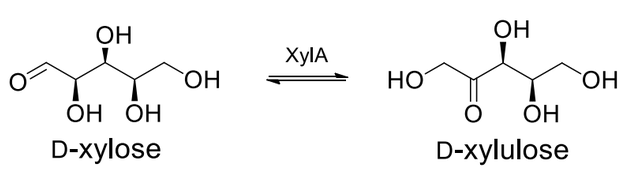
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-Fuculose -1-phosphate from L-fuculose and ATP per minute at 37 ºC.

Package: 100 U, 500 U, 1 KU

EN01042 D-xylose isomerase; XylA

E.C.: 5.3.1.5

E. coli recombinant D-xylose isomerase *from E.coli* K12



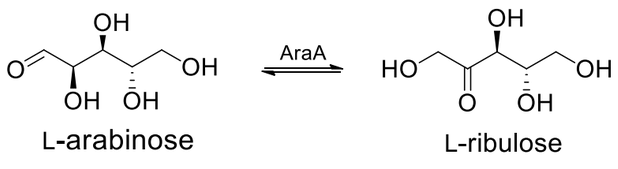
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of D-xylulose from D-xylose per minute at 37 ºC.

Package: 100 U, 500 U, 1 KU

EN01043 L-arabinose isomerase; AraA

E.C.: 5.3.1.4

E. coli recombinant L-arabinose isomerase from *E. coli O157:H7*



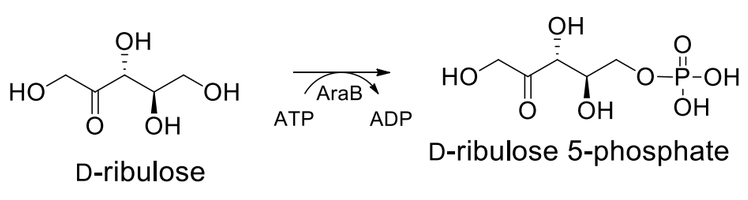
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-ribulose from L-arabinose per minute at 37 ºC.

Package: 1 KU, 5 KU

EN01044 D-ribulose kinase; AraB

E.C.: 2.7.1.47

E. coli recombinant D-ribulose kinase from *E.coli*



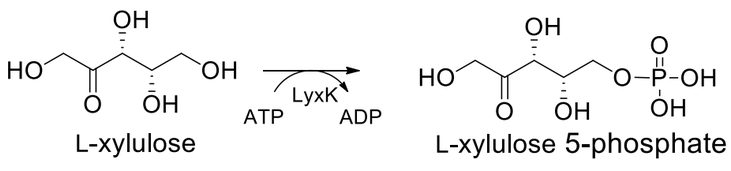
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of D-ribulose 5-phosphate from D-ribulose and ATP per minute at 37 ºC.

Package: 5 U, 20 U, 100 U

EN01045 L-xylulose kinase; LyxK

E.C.: 2.7.1.53

E. coli recombinant L-xylulose kinase from *E.coli*



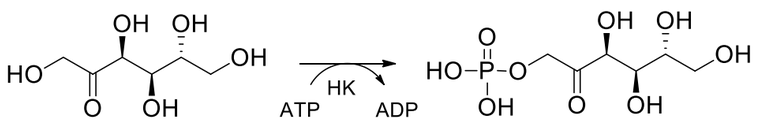
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of L-xylulose 5-phosphate from L-xylulose and ATP per minute at 37 ºC.

Package: 5 U, 20 U, 100 U

EN01046 Fructose kinase; FruK

E.C.: 2.7.1.4

E. coli recombinant fructose kinase from *Bacillus subtilis*



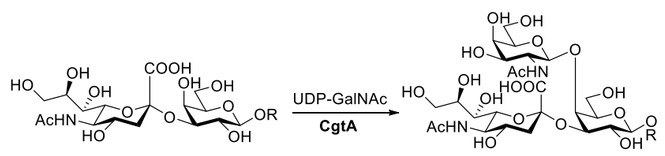
One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of D-fructose 1-phosphate from D-fructose and ATP per minute at 37 ºC.

Package: 1 U, 5 U, 20 U

EN01047 β1,4-N-acetylgalactosaminyltransferase; CgtA

E.C.: 2.4.1.92

E. coli recombinant CgtA from *Campylobacter jejuni*



One unit is defined as the amount of enzyme that catalyzes the formation of 1 μmol of Siaα2,3(GalNAcβ1,4)Lac from Siaα2,3Lac and UDP-GalNAc per minute at 37 °C.

Package: 1 U, 5 U, 20 U

Sugar Nucleotides

Sugar nucleotides

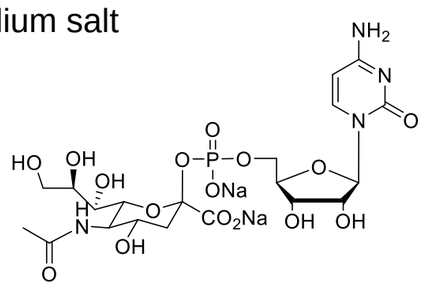
The basic building blocks of complex carbohydrates are activated nucleotide sugars, just as the basic building blocks of DNA are nucleotide triphosphates. Nucleotide sugars contain a nucleotide, such as UDP, GDP or CMP, at the reducing end of the sugar ring, locking the structure in either the α or β anomeric state. Glycosyltransferases add the reducing end of the nucleotide sugar to a substrate, such as a protein side chain or growing chain of sugars, which liberates the nucleotide as a good leaving group.

Rare Sugars

Sugar nomenclature is largely derived from the number of carbons and orientation of hydroxyl (i.e. -OH) groups in each sugar structure. For every sugar commonly spoken of, there are one or more sugars with different hydroxyl orientations, and distinct names and functions. Often these sugars, such as psicose and tagatose, are rarely found in nature but have implications for energy metabolism, energy storage, and diverse structural applications.

SN02001 CMP-Neu5Ac.2Na

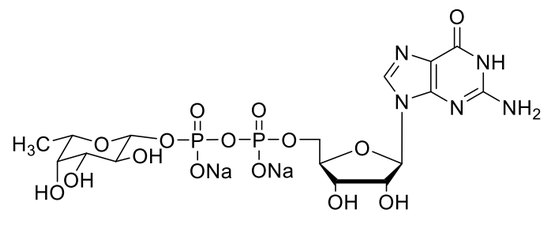
Cytidine-5′-monophospho-N-acetylneuraminic acid disodium salt



$C_{20}H_{29}N_4O_{16}PNa_2$; M.W.: 658.41 g/mol	
CAS:	3063-71-6
Package:	10 mg, 50 mg, 100 mg

SN02002 GDP-L-Fuc.2Na

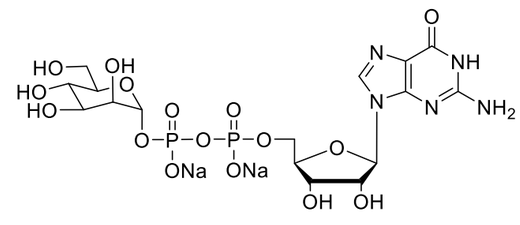
Guanosine 5’-diphospho-β-L-fucose disodium salt



$C_{16}H_{23}N_5O_{15}P_2Na_2$; M.W.: 633.31 g/mol	
CAS:	15839-70-0
Package:	10 mg, 50 mg, 100 mg

SN02003 GDP-D-Man.2Na

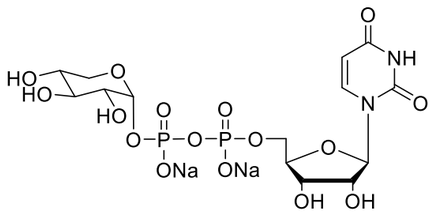
Guanosine 5’-diphospho-D-mannose disodium salt



$C_{16}H_{23}N_5O_{16}P_2Na_2$; MW: 649.30 g/mol	
CAS:	103301-73
Package:	50 mg, 100 mg, 250 mg

SN02004 UDP-Xyl.2Na

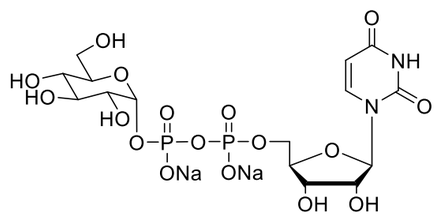
Uridine 5’-diphospho-xylose



$C_{14}H_{19}N_2O_{16}P_2Na_2$; MW: 536.276 g/mol	
CAS:	
Package:	10 mg, 50 mg, 100 mg

SN02005 UDP-Glc.2Na

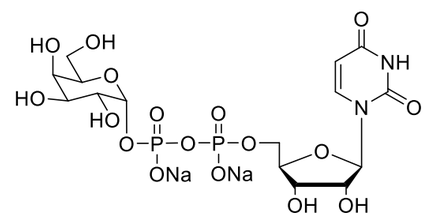
Uridine 5′-diphospho-glucose disodium salt



$C_{15}H_{22}N_2O_{17}P_2Na_2$; MW: 610.27 g/mol	
CAS:	117756-22-6, 28053-08-9
Package:	250 mg, 500 mg, 1000 mg

SN02006 UDP-Gal.2Na

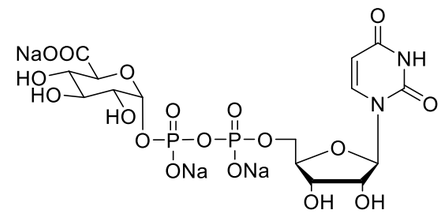
Uridine 5′-diphospho-galactose disodium salt



$C_{15}H_{22}N_2O_{17}P_2Na_2$; MW: 610.27 g/mol	
CAS:	137868-52-1, 2956-16-3
Package:	10 mg, 50 mg, 100 mg

SN02007 UDP-GlcA.3Na

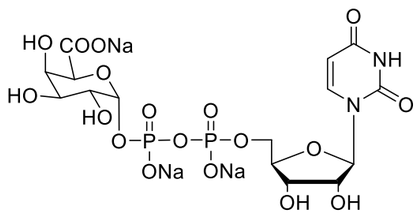
Uridine 5’-disphospho-glucuronic acid trisodium salt



$C_{15}H_{19}N_2O_{18}P_2Na_3$; MW: 646.23 g/mol	
CAS:	67300-19-6
Package:	10 mg, 50 mg, 100 mg

SN02008 UDP-GalA.3Na

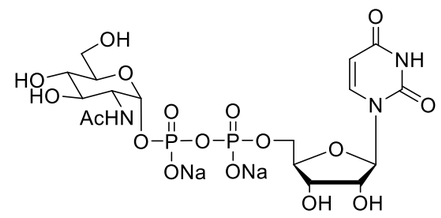
Guanosine 5’-diphospho-galuronic acid trisodium salt



$C_{15}H_{19}N_2O_{18}P_2Na_3$; MW: 646.23 g/mol	
CAS:	148407-07-2
Package:	10 mg, 50 mg, 100 mg

SN02009 UDP-GlcNAc.2Na

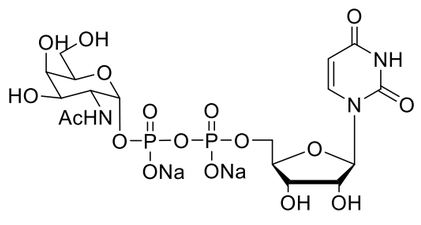
Uridine 5’-diphospho-*N*-acetylglucosamine disodium salt



$C_{17}H_{25}N_3O_{17}P_2Na_2$; M.W.: 651.32 g/mol	
CAS:	91183-98-1
Package:	25 mg, 50 mg, 100 mg

SN02010 UDP-GalNAc.2Na

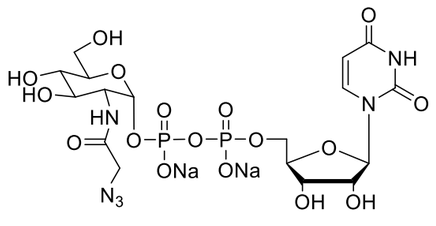
Uridine 5’-diphospho-*N*-acetylgalactosamine disodium salt



$C_{17}H_{25}N_3O_{17}P_2Na_2$; M.W.: 651.32 g/mol	
CAS:	108320-87-2
Package:	10 mg, 50 mg, 100 mg

SN02011 UDP-GlcNAz.2Na

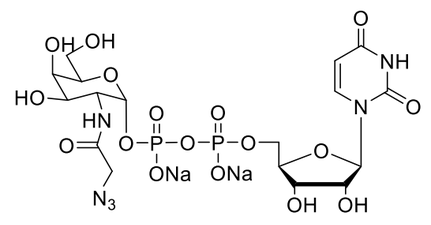
Uridine 5’-disphopho-*N*-acetylazidoglucosamine disodium salt



$C_{17}H_{24}N_6O_{17}P_2Na_2$; MW: 692.05 g/mol	
CAS:	n/a
Package:	10 mg, 50 mg, 100 mg

SN02012 UDP-GalNAz.2Na

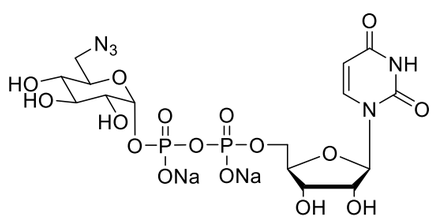
Uridine 5’-diphospho-*N*-acetylazidogalactosamine disodium salt



$C_{17}H_{24}N_6O_{17}P_2Na_2$; MW: 692.05 g/mol	
CAS:	n/a
Package:	10 mg, 50 mg, 100 mg

SN02013 – UDP-6-azido-6-deoxy-D-Glc.2Na

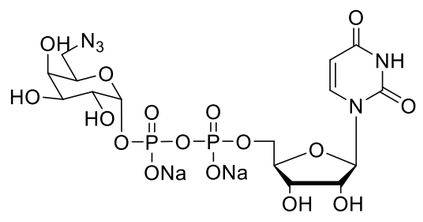
Uridine 5’-disphospho-6-azido-6-deoxy-D-glucose disodium salt



$C_{15}H_{21}N_5Na_2O_{16}P_2$; M.W.: 635.28 g/mol	
CAS:	537039-67-1
Package:	2 mg, 5 mg, 10 mg

SN02014 – UDP-6-azido-6-deoxy-D-Gal.2Na

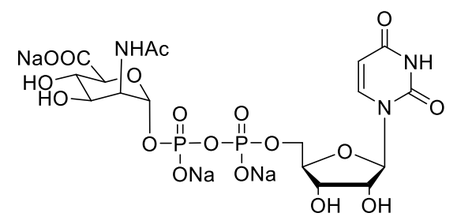
Uridine 5’-disphospho-6-azido-6-deoxy-D-galactose disodium salt



$C_{15}H_{21}N_5Na_2O_{16}P_2$; M.W.: 635.28 g/mol	
CAS:	868141-12-2
Package:	2 mg, 5 mg, 10 mg

SN02015 – UDP-ManNAcA.3Na

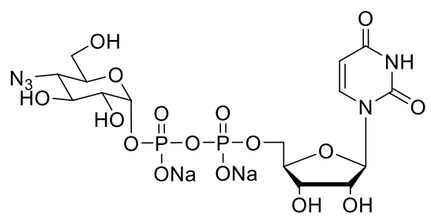
Uridine 5’-disphospho-N-acetyl-D-mannosaminuronic acid trisodium salt



$C_{17}H_{22}N_3Na_3O_{18}P_2$; MW: 687.28 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

SN02016 – UDP-4-azido-4-deoxy-D-Glc.2Na

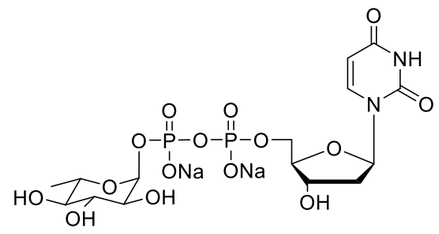
Uridine 5’-disphospho-4-azido-4-deoxy-D-glucose disodium salt



$C_{15}H_{21}N_5Na_2O_{16}P_2$; MW: 635.28 g/mol	
CAS:	1030832-12-2
Package:	2 mg, 5 mg, 10 mg

SN02017 – dTDP-α-L-Rha.2Na

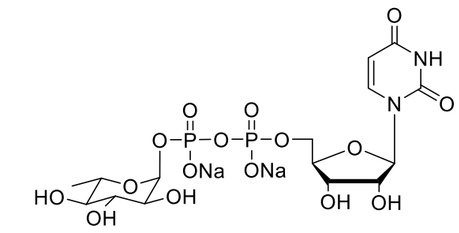
Thymidine 5’-disphospho-α-L-rhamnose disodium salt



$C_{15}H_{22}N_2Na_2O_{15}P_2$; MW: 578.27 g/mol	
CAS:	2147-59-3, 16268-29-4
Package:	2 mg, 5 mg, 10 mg

SN02018 – UDP-α-L-Rha.2Na

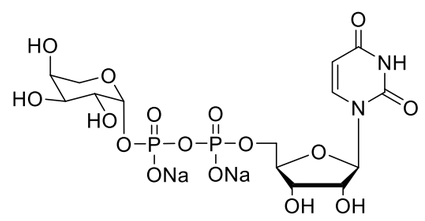
Uridine 5’-disphospho-α-L-rhamnose disodium salt



$C_{15}H_{22}N_2Na_2O_{16}P_2$; MW: 594.27 g/mol	
CAS:	30174-43-7
Package:	2 mg, 5 mg, 10 mg

SN02019 – UDP-β-L-Ara.2Na

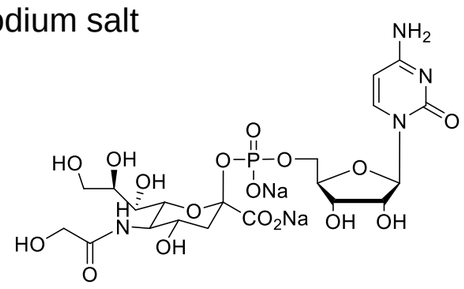
Uridine 5’-disphospho-β-L-arabinose disodium salt



$C_{14}H_{20}N_2Na_2O_{16}P_2$; MW: 580.24 g/mol	
CAS:	15839-78-8; 331001-44-6
Package:	2 mg, 5 mg, 10 mg

SN02020 – CMP-Neu5Gc.2Na

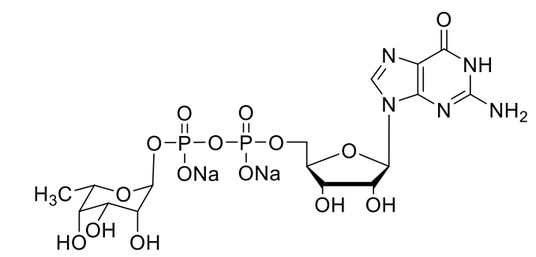
Cytidine-5′-monophospho-N-glycolylneuraminic acid disodium salt



$C_{20}H_{29}N_4Na_2O_{17}P$; M.W.: 674.42 g/mol	
CAS:	98300-80-2
Package:	2 mg, 5 mg, 10 mg

SN02021 – GDP-6-deoxy-α-D-talose.2Na

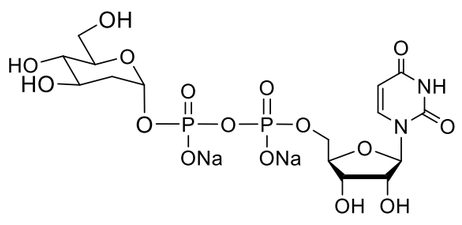
Guanosine 5’-diphospho-6-deoxy-α-D-talose



$C_{16}H_{23}N_5Na_2O_{15}P_2$; M.W.: 633.31 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

SN02022 – UDP-2-deoxy-Glucose.2Na

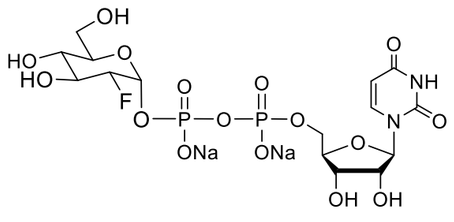
Uridine 5’-disphospho-2-deoxy-Glucose disodium salt



$C_{15}H_{22}N_2Na_2O_{16}P_2$; MW: 594.27 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

SN02023 – UDP-2-F-Glucose.2Na

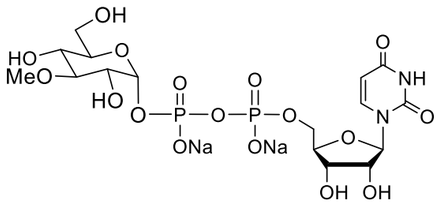
Uridine 5’-disphospho-2-F-Glucose disodium salt



$C_{15}H_{21}FN_2Na_2O_{16}P_2$; M.W.: 612.16 g/mol	
CAS:	67341-43-9
Package:	2 mg, 5 mg, 10 mg

SN02024 – UDP-3-methyl-Glucose.2Na

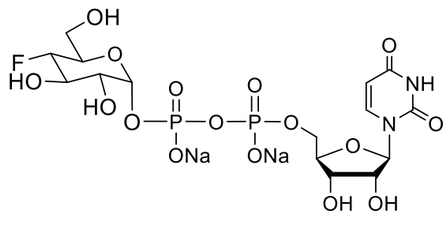
Uridine 5’-disphospho-3-methyl-Glucose disodium salt



$C_{16}H_{24}N_2Na_2O_{17}P_2$; M.W.: 624.29 g/mol	
CAS:	n/a
Package:	Quote

SN02025 – UDP-4-F-D-Glc.2Na

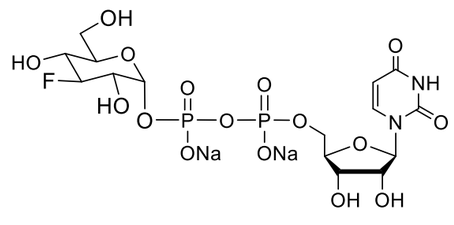
Uridine 5’-disphospho-4-F-D-glucose disodium salt



$C_{15}H_{21}FN_2Na_2O_{16}P_2$; M.W.: 612.26 g/mol	
CAS:	
Package:	2 mg, 5 mg, 10 mg

SN02026 – UDP-3-F-D-Glc.2Na

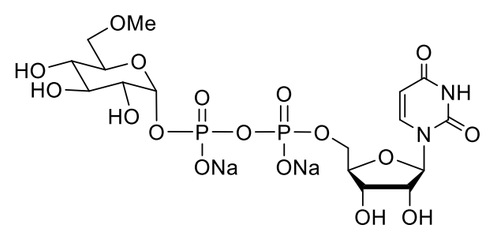
Uridine 5’-disphospho-3-F-D-glucose disodium salt



$C_{15}H_{21}FN_2Na_2O_{16}P_2$; M.W.: 612.26 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

SN02027 – UDP-6-Methyl-6-deoxy-D-Glc.2Na

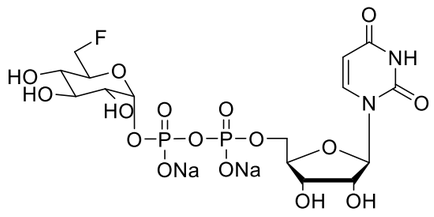
Uridine 5’-disphospho-6-Methyl-6-deoxyl-D-glucose disodium salt



$C_{16}H_{24}N_2Na_2O_{17}P_2$; MW: 624.29 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

SN02028 – UDP-6-Fluoro-6-deoxy-D-Glc.2Na

Uridine 5’-disphospho-6-Fluoro-6-deoxy-D-glucose disodium salt



$C_{15}H_{21}FN_2Na_2O_{16}P_2$; MW: 612.26 g/mol	
CAS:	n/a
Package:	2 mg, 5 mg, 10 mg

Rare Sugar Nucleotides		
Catalog #	**Sugar Nucleotide**	**Package**
SN02031	UDP-GlcA.xNH3	Quote
SN02032	UDP-GlcUA	Quote
SN02033	UDP-D-glucose disodium salt – Approx 30% content by UV	2 g, 5 g, 10 g
SN02034	UDP-α-D-galactose ammonium salt	5 mg, 10 mg, 20 mg
SN02035	UDP-α-D-galactose disodium salt	50 mg, 100 mg, 250 mg
SN02036	UDP-3-O-(R-3-hydroxymyristoyl)-N-acetyl-D-glucosamine	Quote
SN02037	UDP-2-ketopropyl-α-D-galactose	Quote
SN02038	CMP-Pse	Quote
SN02039	GDP-D-galactose	Quote
SN02040	GDP-L-galactose	Quote
SN02041	TDP-Fuc	Quote
SN02042	TDP-Glc	25 mg, 50 mg, 100 mg
SN02043	dTDP-α-Glc.2Na	25 mg, 50 mg, 100 mg
SN02044	D-TDP-β-L-Rha	1 mg, 2 mg, 5 mg
SN02045	ADPR-pNP	Quote
SN02046	ADPRP	Quote
SN02047	ADP-4-deoxy-D-glucose	Quote
SN02048	ADP-D-glucose disodium salt	25 mg, 50 mg, 100 mg
SN02049	ADP-D-glycerol-β-D-manno-heptose	Quote
SN02050	ADP-L-glycerol-β-D-manno-heptose	Quote

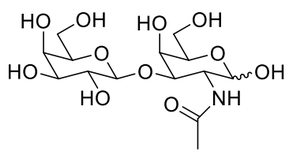
Oligosaccharides

Oligosaccharides

A class of saccharides of intermediate length, usually 2-10 residues, distinguished from single monosaccharides and extended polysaccharides. Polysaccharides may be digested into shorter oligosaccharides, while some oligosaccharides are naturally occurring in foods. Oligosaccharides that are not digested by the vertebrate gut can be passed to the colon, and are termed prebiotic if fermented by intestinal microbiota. Oligosaccharides have been researched for diverse roles, including decreasing infection, insulin response, and cancer development risk, or improving fatty acid synthesis, antioxidant activity, and uptake of minerals.

OS03001 Galacto-N-biose; Gal-β1,3-GalNAc

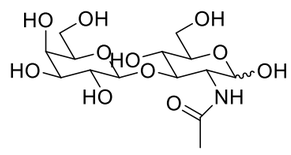
2-Acetamido-2-deoxy-3-O-(β-D-galactopyranosyl)-D-galactopyranose



$C_{14}H_{25}NO_{11}$; MW: 383.35	
CAS:	20972-29-6; 3554-90-3
Package:	10 mg, 50 mg, 500 mg

OS03002 Lacto-N-Biose; Gal-β1,3-GlcNAc

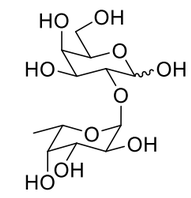
2-Acetamido-2-deoxy-3-O-(β-D-galactopyranosyl)-D-glucopyranose



$C_{14}H_{25}NO_{11}$; MW: 383.35	
CAS:	489-52-1; 50787-09-2
Package:	10 mg, 50 mg, 500 mg

OS03003 Blood group H disaccharide

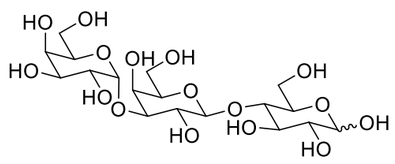
Fuc-α1,2-Gal



$C_{12}H_{22}O_{16}$; MW: 326.30	
CAS:	16741-18-7; 24656-24-4
Package:	5 mg, 25 mg, 100 mg

OS03004 Isoglobotriose; α-Gal

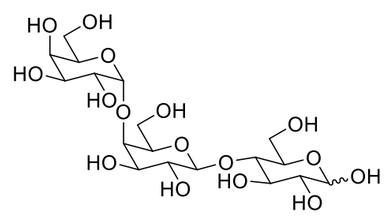
Gal-α1,3-Gal-β1,4-Glc



$C_{18}H_{32}O_{16}$; MW: 504.44	
CAS:	41744-59-6
Package:	10 mg, 50 mg, 100 mg

OS03005 Globotrinose

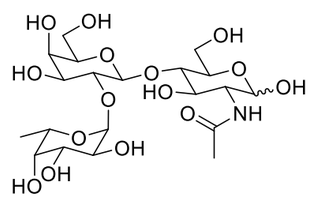
GD3; pK antigen; Gal-α1,4-Gal-β1,4-Glc



$C_{18}H_{32}O_{16}$; MW: 504.44	
CAS:	66580-68-5
Package:	10 mg, 50 mg, 500 mg

OS03006 Blood group Type II H-antigentriose

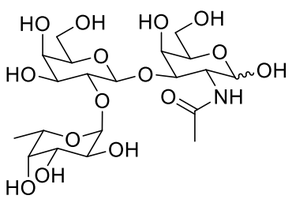
Fuc-α1,2-Gal-β1,4-GlcNAc



$C_{20}H_{35}NO_{15}$ MW: 529.49	
CAS:	
Package:	10 mg, 50 mg, 500 mg

OS03007 Blood group Type III/IV H-antigen

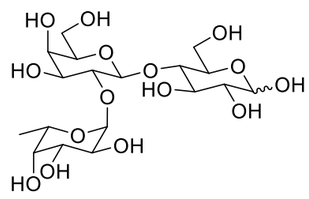
Fuc-α1,2-Gal-β1,3-GalNAc



$C_{20}H_{35}NO_{15}$ MW: 529.49	
CAS:	
Package:	10 mg, 50 mg, 500 mg

OS03008 Blood group Type V H-antigen

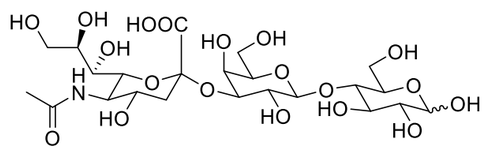
Fuc-α1,2-Gal-β1,4-Glc



$C_{18}H_{32}NO_{15}$; MW: 488.44	
CAS:	
Package:	10 mg, 50 mg, 500 mg

OS03009 3'-Sialyllactose

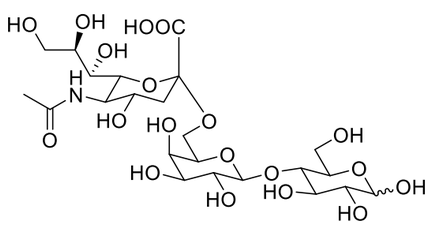
Sia-α2,3-Gal-β1,4-Glc



$C_{23}H_{39}NO_{19}$; MW: 633.55	
CAS:	35890-38-2; 56144-12-8
Package:	10 mg, 50 mg, 500 mg

OS03010 6'-Sialyllactose

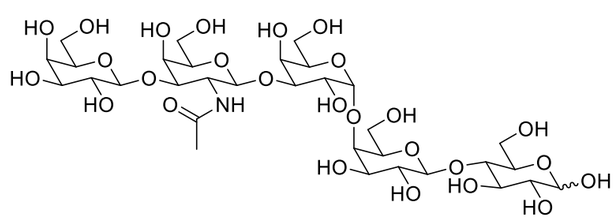
Sia-α2,6-Gal-β1,4-Glc



$C_{32}H_{55}NO_{26}$; MW: 869.77	
CAS:	
Package:	10 mg, 50 mg, 500 mg

OS03012 Globo-N-pentaose; Gb5

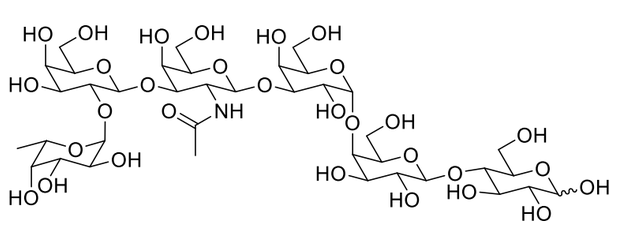
Gal-β1,3-GalNAc-β1,3-Gal-α1,4-Gal-β1,4-Glc



$C_{38}H_{65}NO_{30}$; MW: 1015.91	
CAS:	
Package:	10 mg, 50 mg, 500 mg

OS03013 Globo-H

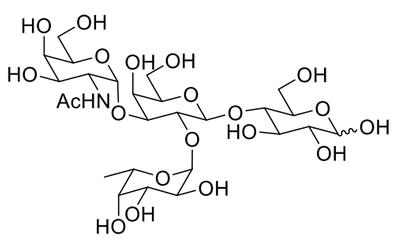
Fuc-α1,2-Gal-β1,3-GalNAc-β1,3-Gal-α1,4-Gal-β1,4-Glc



$C_{26}H_{45}N_2O_{20}$; MW: 691.63	
CAS:	59957-92-5
Package:	10 mg, 50 mg, 500 mg

OS03014 Blood Group Type V A-antigen

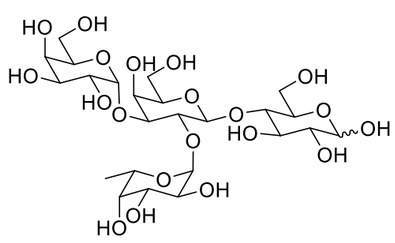
GalNAc-α1,3-(Fuc-α1,2)-Gal-β1,4-Glc



$C_{24}H_{40}NO_{20}$; MW: 650.58	
CAS:	
Package:	10 mg, 50 mg, 500 mg

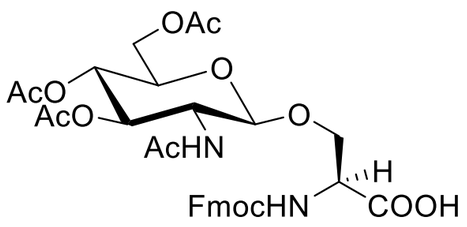
OS03015 Blood Group Type V B-antigen

Gal-α1,3-(Fuc-α1,2)-Gal-β1,4-Glc



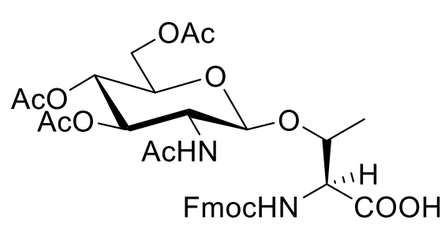
Glycoamino Acids

GA10100 GlcNAc-Ser



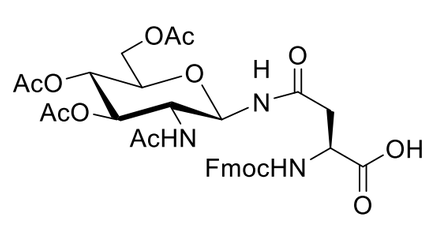
$C_{32}H_{36}N_2O_{13}$; MW: 656.64	
CAS:	160067-63-0
Package:	50 mg, 100 mg, 200 mg

GA10200 GlcNAc-Thr



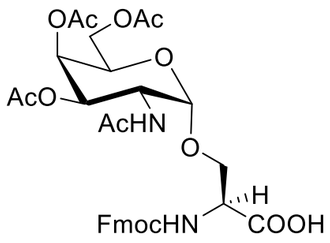
$C_{33}H_{38}N_2O_{13}$; MW: 670.67	
CAS:	160168-40-1
Package:	50 mg, 100 mg, 200 mg

GA10300 GlcNAc-Asn



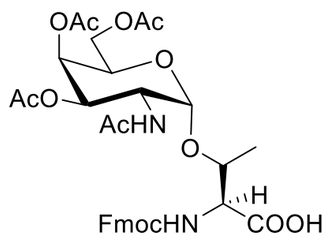
$C_{33}H_{37}N_3O_{13}$; MW: 683.67	
CAS:	131287-39-3
Package:	50 mg, 100 mg, 200 mg

GA20100 GalNAc-Ser



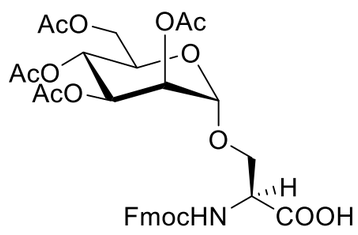
$C_{32}H_{36}N_2O_{13}$; MW: 656.64	
CAS:	120173-57-1
Package:	50 mg, 100 mg, 200 mg

GA20200 GalNAc-Thr



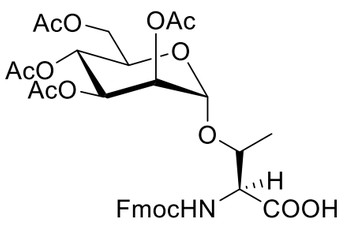
$C_{33}H_{38}N_2O_{13}$; MW: 670.67	
CAS:	116783-35-8
Package:	50 mg, 100 mg, 200 mg

GA30100 Man-Ser



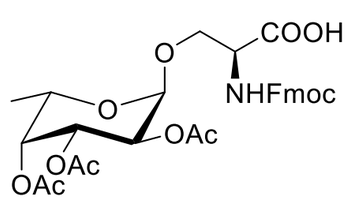
$C_{32}H_{35}NO_{14}$; MW: 657.63	
CAS:	118358-80-8
Package:	50 mg, 100 mg, 200 mg

GA30200 Man-Thr



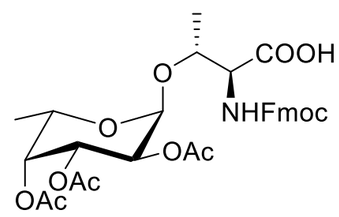
$C_{33}H_{37}NO_{14}$; MW: 671.65	
CAS:	169219-08-3
Package:	50 mg, 100 mg, 200 mg

GA40100 Fuc-Ser



$C_{30}H_{33}NO_{12}$; MW: 599.59	
CAS:	
Package:	50 mg, 100 mg, 200 mg

GA40200 Fuc-Thr

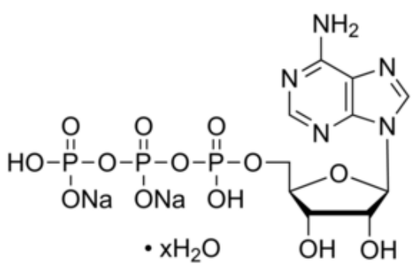


$C_{31}H_{35}NO_{12}$; MW: 613.62	
CAS:	
Package:	50 mg, 100 mg, 200 mg

Contact us for different quantities and costumer synthesis

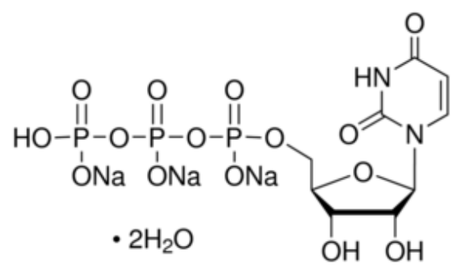
Glyco-Related Chemicals

GC03001 Adenosine 5′-triphosphate disodium salt hydrate; ATP



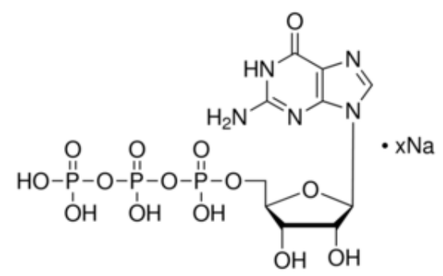
$C_{10}H_{14}N_5Na_2O_{13}P_3$; MW: 551.14	
CAS:	34369-07-8
Package:	5 g, 25 g, 50 g

GC03002 Uridine 5′-triphosphate trisodium salt dihydrate; UTP



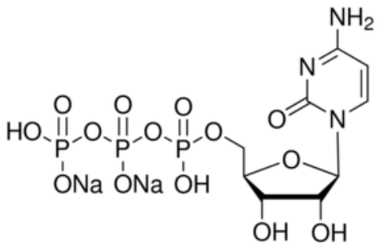
$C_9H_{12}N_2Na_3O_{15}P_3$; MW: 586.12	
CAS:	116295-90-0
Package:	1 g, 5 g, 10 g

GC03003 Guanosine 5′-triphosphate sodium salt hydrate; GTP



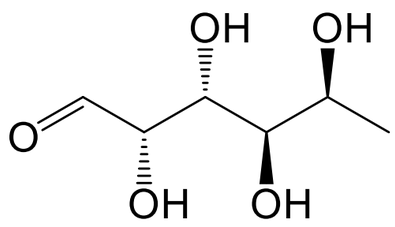
$C_{10}H_{16}N_5Na_xO_{14}P_3$; MW: 523.18	
CAS:	36051-31-7
Package:	25 mg, 50 mg, 250 mg

GC03004 Cytidine 5′-triphosphate disodium salt ; CTP



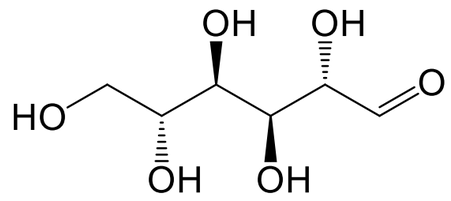
$C_9H_{14}N_3Na_2O_{14}P_3$; MW: 527.12	
CAS:	36051-68-0
Package:	1 g, 5 g, 10 g

GC03005 L-fucose



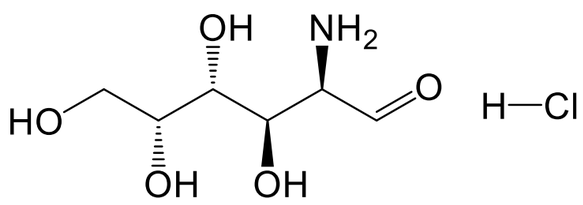
$C_6H_{12}O_5$; MW: 164.16	
CAS:	2438-80-4
Package:	5 g, 25 g, 50 g

GC03006 D-mannose



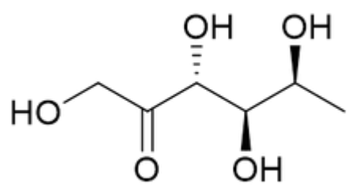
$C_6H_{12}O_6$; MW: 180.16	
CAS:	3458-28-4
Package:	25 g, 50 g, 100 g

GC03007 D-galactosamine HCl



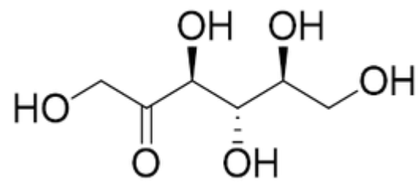
$C_6H_{13}NO_5 \cdot HCl$; MW: 215.63	
CAS:	1772-03-8
Package:	25 g, 50 g, 100 g

GC03008 L-fuculose



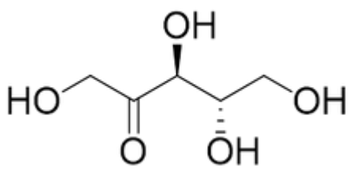
$C_6H_{12}O_5$; MW: 164.165	
CAS:	13074-08-3
Package:	10 mg, 50 mg, 500 mg

GC03009 L-psicose



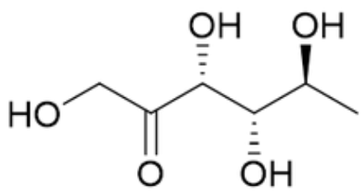
$C_6H_{12}O_6$ MW: 180.16	
CAS:	16354-64-6
Package:	50 mg, 100mg, 500 mg

GC03010 L-ribulose



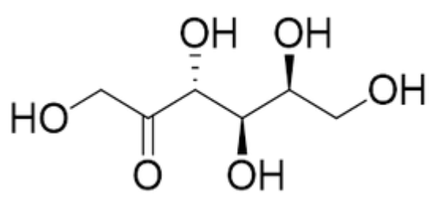
$C_5H_{10}O_5$ MW: 150.13	
CAS:	2042-27-5
Package:	100 mg, 250 mg, 500 mg

GC03011 L-rhamnulose monohydrate



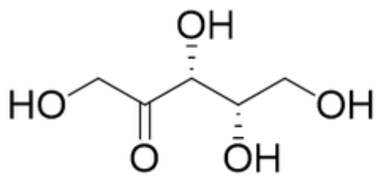
$C_6H_{12}O_5.H_2O$; MW: 182.17	
CAS:	10030-85-0; 6155-35-7; 3615-41-6
Package:	10 g, 50 g, 100 g

GC03012 L-tagatose



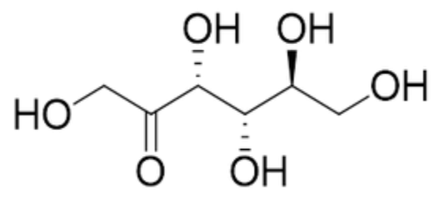
$C_6H_{12}O_6$; MW: 180.16	
CAS:	17598-82-2
Package:	50 mg, 100 mg, 1000 mg

GC03013 L-xylulose



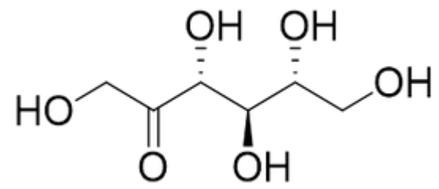
$C_5H_{10}O_5$; MW:150.13	
CAS:	527-50-4
Package:	25 mg, 100 mg, 500 mg

GC03014 L-fructose



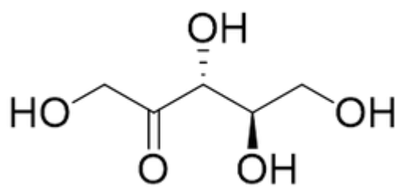
$C_6H_{12}O6$; MW: 180.16	
CAS:	7776-48-9
Package:	100 mg, 500 mg, 1000 mg

GC03015 D-psicose



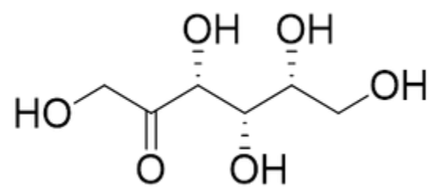
$C_6H_{12}O_6$; MW: 180.16	
CAS:	551-68-8
Package:	1 g, 5 g, 10 g

GC03016 D-ribulose



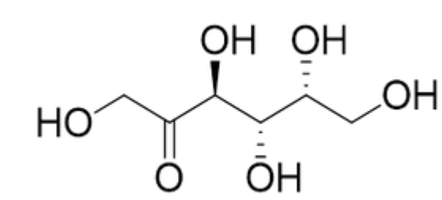
$C_5H_{10}O_5$; MW: 150.13	
CAS:	488-84-6
Package:	100 mg,250 mg, 500 mg

GC03017 D-sorbose



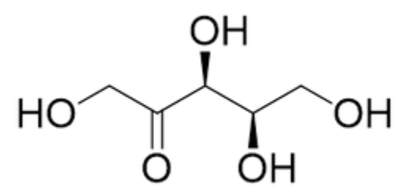
$C_6H_{12}O_6$; MW: 180.16	
CAS:	3615-56-3
Package:	1 g, 5 g, 10 g

GC03018 D-tagatose



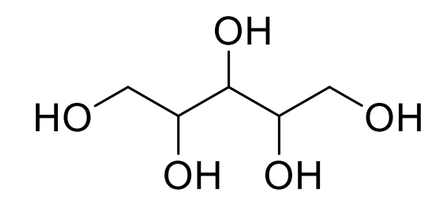
$C_6H_{12}O_6$; MW: 180.16	
CAS:	87-81-0
Package:	50 g, 100 g, 250 g

GC03019 D-xylulose



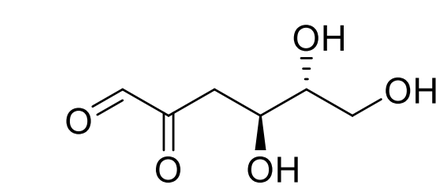
$C_5H_{10}O_5$; MW: 150.13	
CAS:	551-84-8
Package:	50 mg, 100 mg, 250 mg

GC03020 D-arabinitol



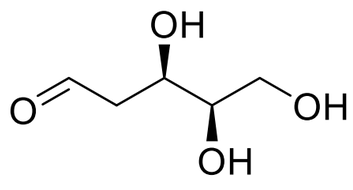
$C_6H_{12}O_5$; MW: 152.14	
CAS:	488-82-4
Package:	50 g, 100 g, 250 g

GC03021 3-deoxy-D-glucosone



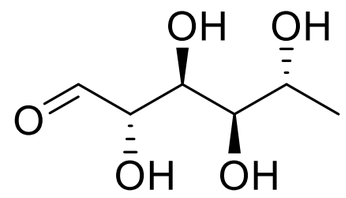
$C_6H_{12}O_6$ MW: 180.16	
CAS:	4084-27-9
Package:	5 mg, 10 mg, 25 mg

GC03022 2-deoxy-D-xylose



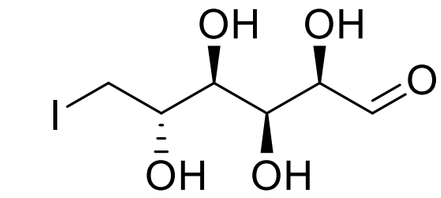
$C_5H_{10}O_5$ MW: 134.13	
CAS:	5284-18-4
Package:	50 mg, 100 mg, 250 mg

GC03023 D-rhamnose



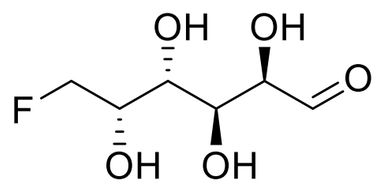
$C_6H_{12}O_5$; MW: 164.16	
CAS:	634-74-2
Package:	100 mg, 250 mg, 500 mg

GC03024 6-iodo-6-deoxy-D-glucose



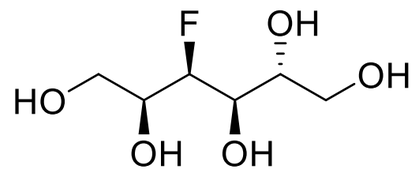
$C_6H_{12}O_6$; MW: 180.16	
CAS:	6304-86-5
Package:	1 g, 2 g, 5 g

GC03025 6-fluoro-6-deoxy-D-galactose



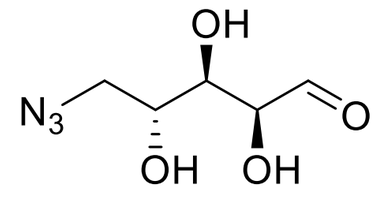
$C_5H_{10}O_5$; MW:182.15	
CAS:	4536-07-6
Package:	1 g, 5 g, 10 g

GC03026 3-fluoro-3-deoxy-D-glucitol



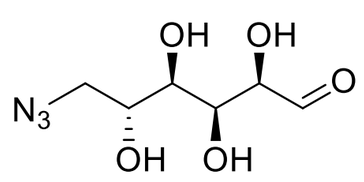
$C_6H_{12}O6$; MW: 184.16	
CAS:	34339-82-7
Package:	25 mg, 100 mg, 250 mg

GC03027 5-azido-5-deoxy-D-arabinose



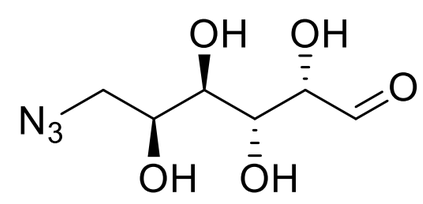
$C_6H_{12}O_6$; MW: 175.14	
CAS:	161418-69-5
Package:	100 mg, 500 mg, 1000 mg

GC03028 6-azido-6deoxy-D-glucose



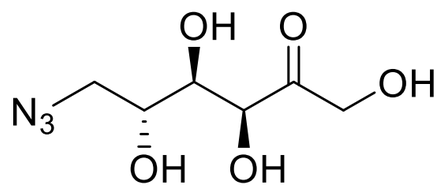
$C_5H_{10}O_5$; MW: 205.17	
CAS:	20847-05-6
Package:	100 mg,250 mg, 500 mg

GC03029 6-azido-6-deoxy-L-galactose



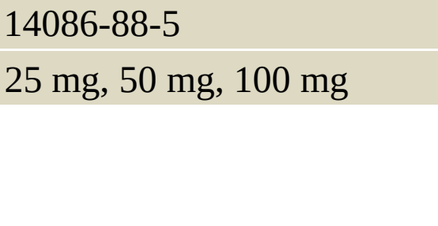
$C_6H_{12}O_6$; MW: 205.17	
CAS:	70932-63-7
Package:	5 mg, 10 mg, 25 mg

GC03030 6-azido-6-deoxy-D-fructose



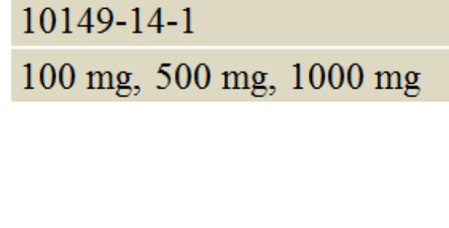
$C_6H_{12}O_6$; MW: 205.17	
CAS:	115827-10-6
Package:	25 mg, 50 mg, 100 mg

GC03031 3-acetylamino-3-deoxy-D-glucose



$C_5H_{10}O_5$; MW: 221.21	
CAS:	14086-88-5
Package:	25 mg, 50 mg, 100 mg

GC03032 KDO; 3-Deoxy-D-*manno*-oct-2-ulosonic acid



$C_8H_{14}O_8$; MW: 238.19	
CAS:	10149-14-1
Package:	100 mg, 500 mg, 1000 mg

N-Glycans, Mucopolysaccharides, HMO's, Glycolipids, Tandem Epitopes, and F-series

N-Glycans

Asparagine (N)-linked glycan synthesis begins on the ER membrane and ends in the Golgi apparatus. Maturation of the glycan and attachment to a protein occurs in the ER and is critical for protein folding, quality control and sorting. Additional organism-specific modifications occur in the Golgi, resulting in a variety of final glycan structures. N-glycans decorate the crystallizable region (Fc) of antibodies, and have been shown to modulate protein interactions in morphogenesis and stress signaling pathways. N-glycans are also important for self-recognition, which microorganisms exploit by appropriating host glycans to evade detection.

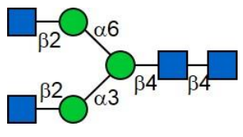
Glycosphingolipids (GSLs)

A class of glycolipids represented by one or more glycosyl residues bound to a ceramide structure by a β-glycosidic linkage. The hydrophobic ceramide can serve as a membrane anchor while exposing hydrophilic glycans on cell surfaces. They are found in bacteria, fungi, plants and animals, and serve roles in cell-to-cell recognition and communication. Examples include galactocerebroside (i.e. cerebroside or GalCer) commonly found in brain tissue, and more complex globotriaosylceramides such as the Pk blood group antigen implicated in HIV susceptibility.

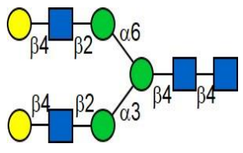
Glycosaminoglycans (GAGs)

Linear, negatively charged polysaccharide molecules that consist of repeating disaccharide units. Individual monosaccharides may be sulfated, and include N-actylhexosamine, uronic acid, and/or galactose. Most GAGs are bound to serine residues of proteins, forming proteoglycans via a conserved tetrasaccharide linkage of xylose-galactose-galactose-glucuronic acid. Hyaluronic acid is an exception, and this GAG is not covalently bound to core proteins or sulfated. GAGs mediate protein interactions, such as growth factors, cell adhesion molecules, and cytokines.

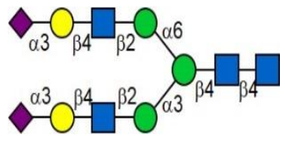
N000



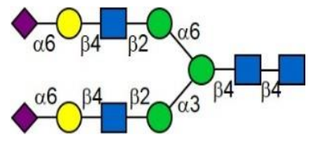
N001



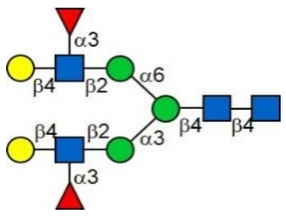
N002



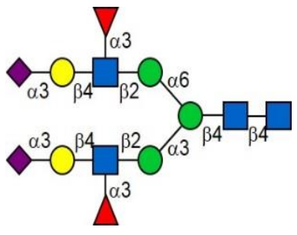
N003



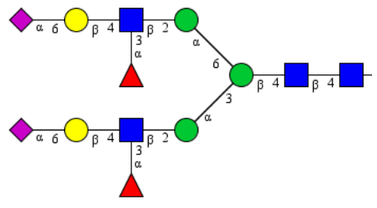
N004



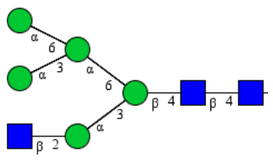
N005



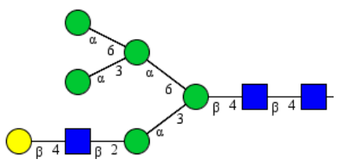
N006



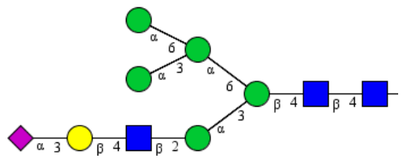
N010



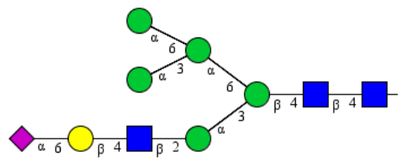
N011



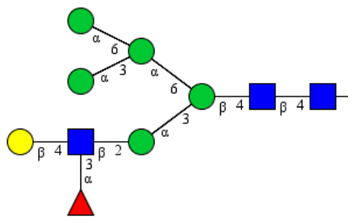
N012



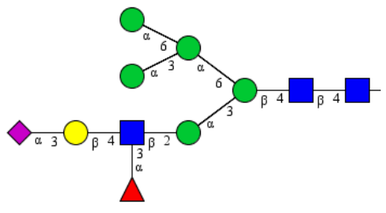
N013



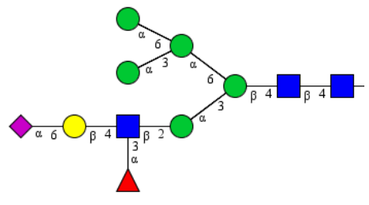
N014



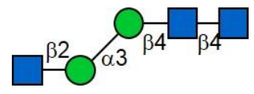
N015



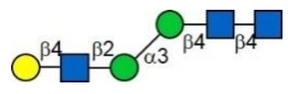
N016



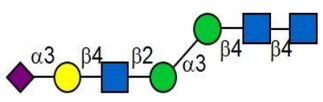
N020



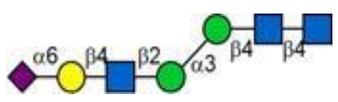
N021



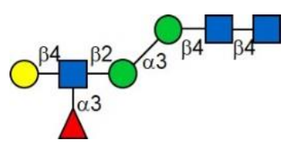
N022



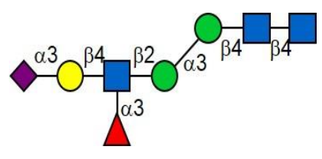
N023



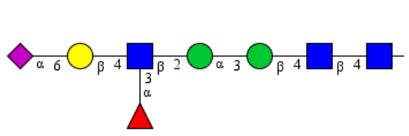
N024



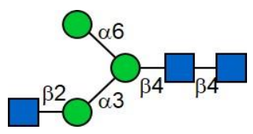
N025



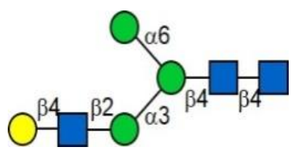
N026



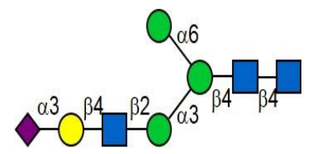
N030



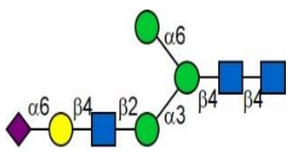
N031



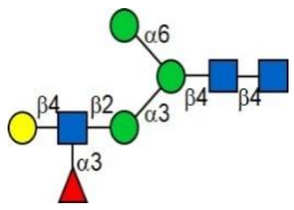
N032



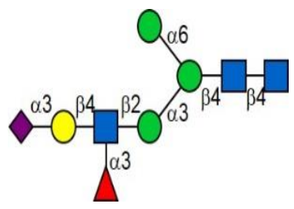
N033



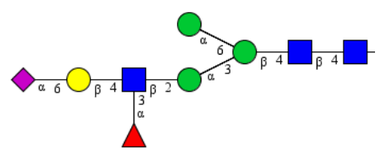
N034



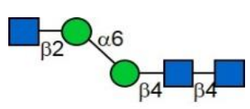
N035



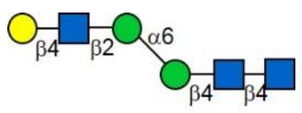
N036



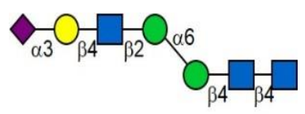
N040



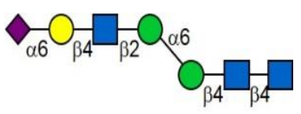
N041



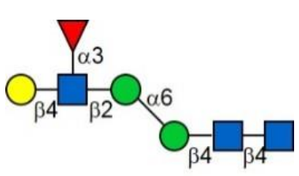
N042



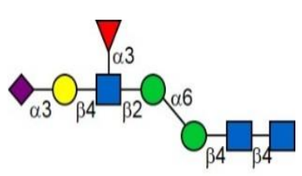
N043



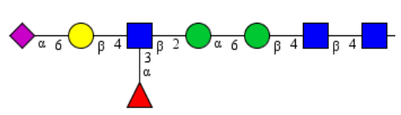
N044



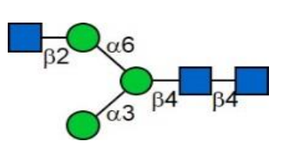
N045



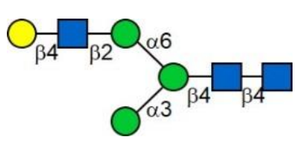
N046



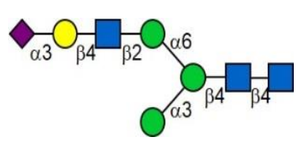
N050



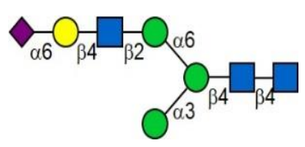
N051



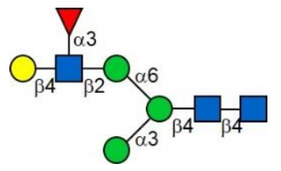
N052



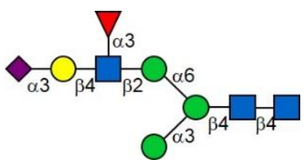
N053



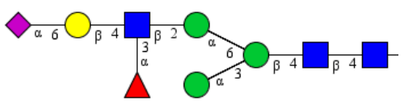
N054



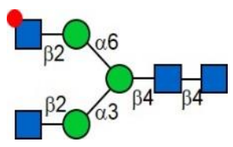
N055



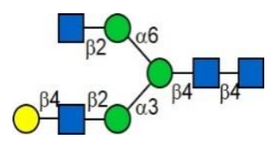
N056



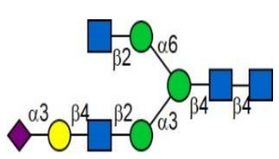
N110



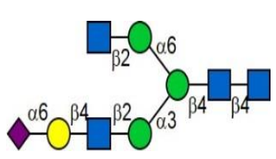
N111



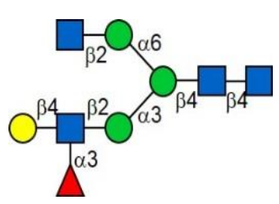
N112



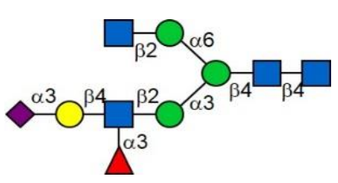
N113



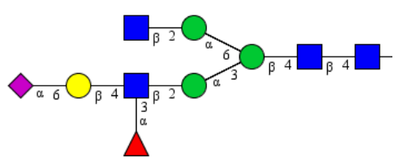
N114



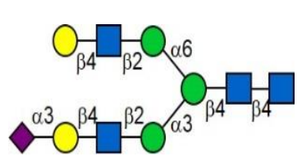
N115



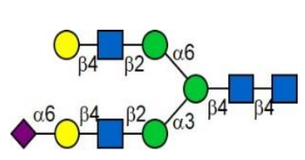
N116



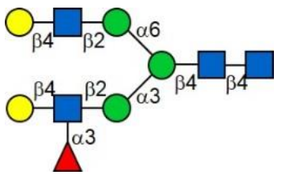
N122



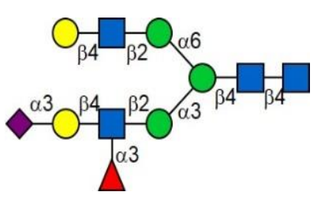
N123



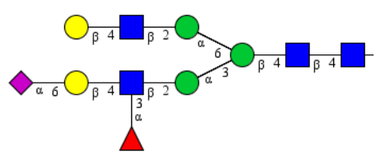
N124



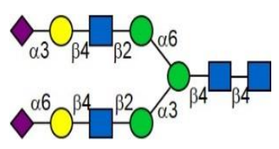
N125



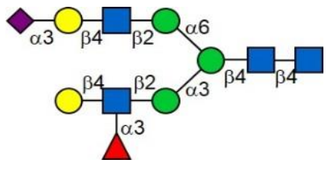
N126



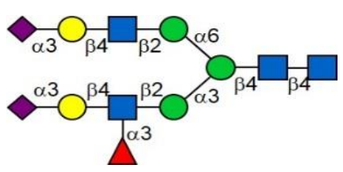
N133



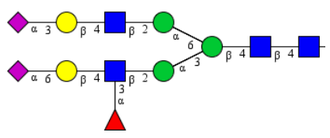
N134



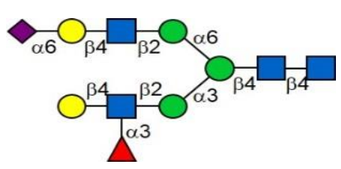
N135



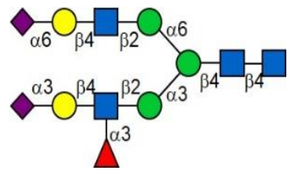
N136



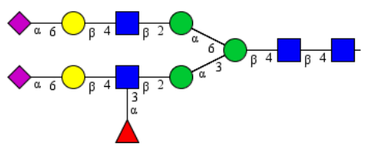
N144



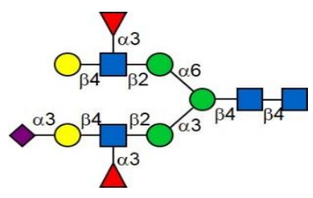
N145



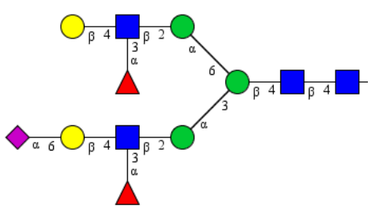
N146



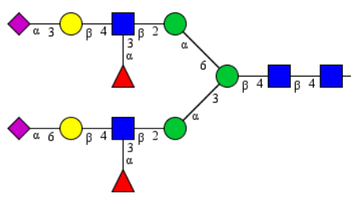
N155



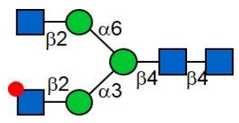
N156



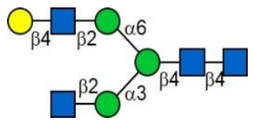
N166



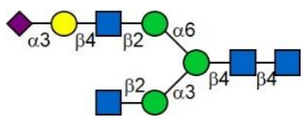
N210



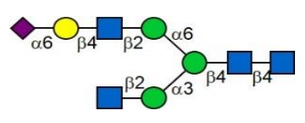
N211



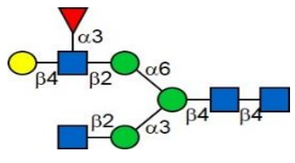
N212



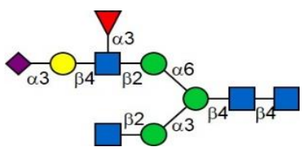
N213



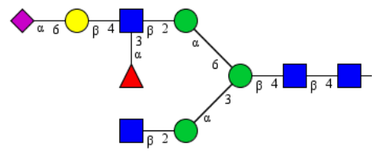
N214



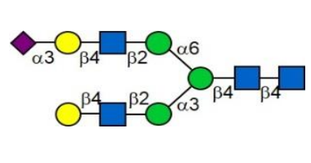
N215



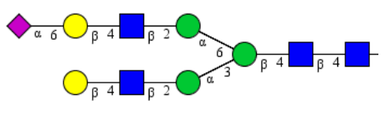
N216



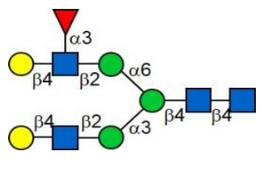
N222



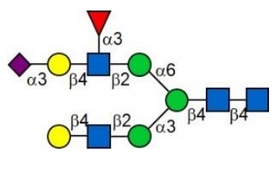
N223



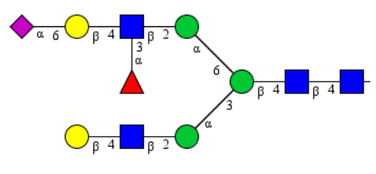
N224



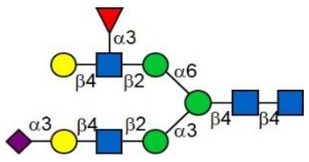
N225



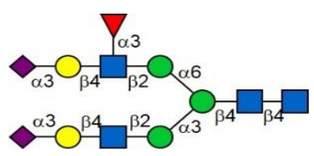
N226



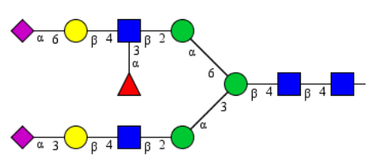
N234



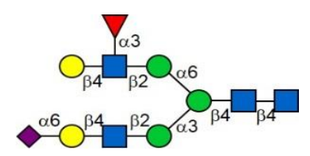
N235



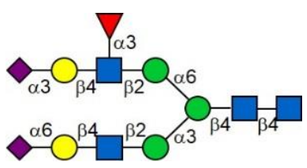
N236



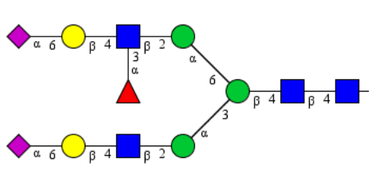
N244



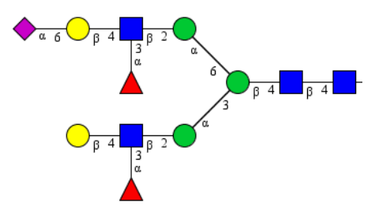
N245



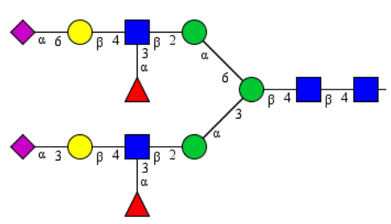
N246



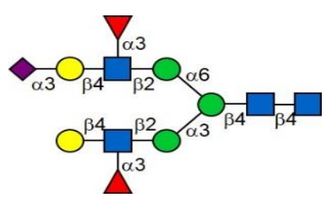
N256



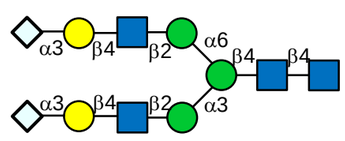
N266



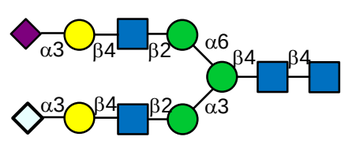
N255



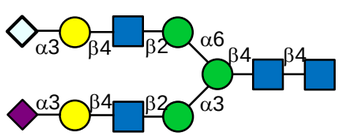
N002G



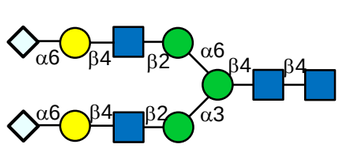
N002G1



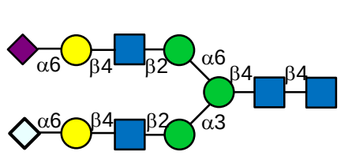
N002G2



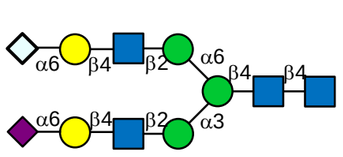
N003G



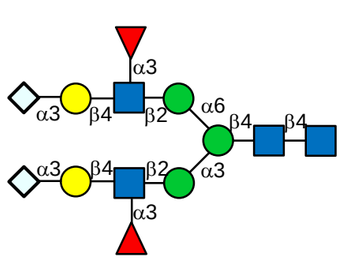
N003G1



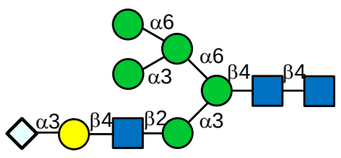
N003G2



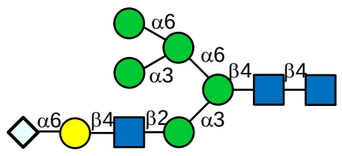
N005G



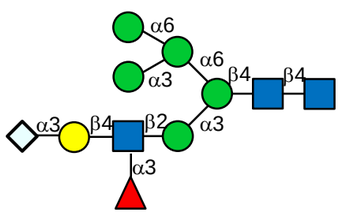
N012G



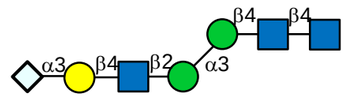
N013G



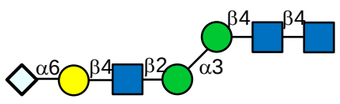
N015G



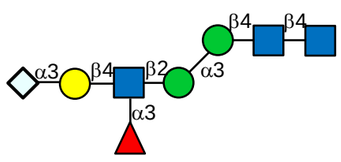
N022G



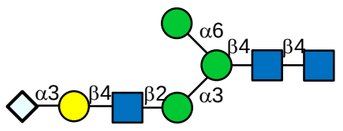
N023G



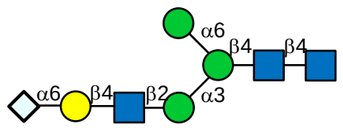
N025G



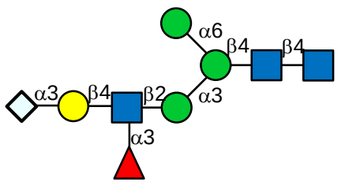
N032G



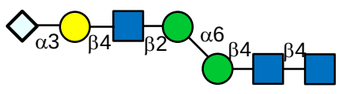
N033G



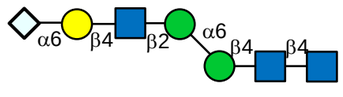
N035G



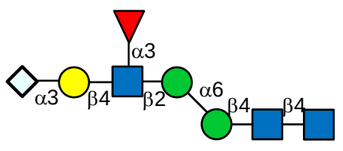
N042G



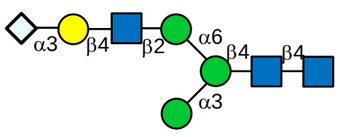
N043G



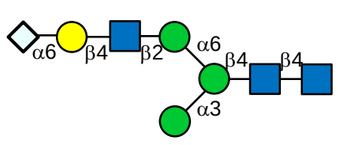
N045G



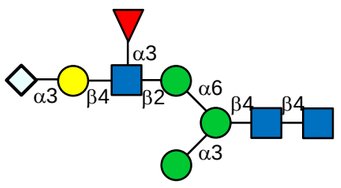
N052G



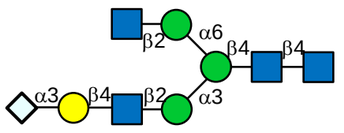
N053G



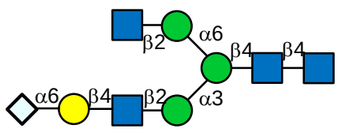
N055G



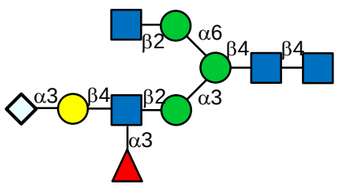
N112G



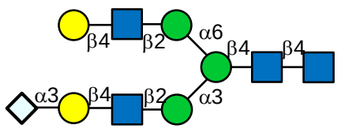
N113G



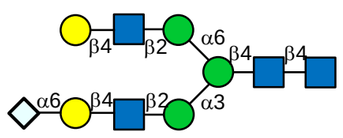
N115G



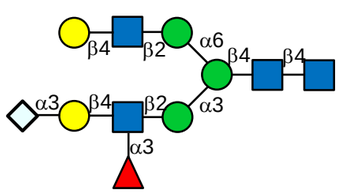
N122G



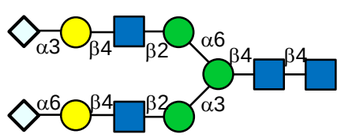
N123G



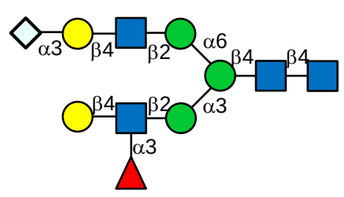
N125G



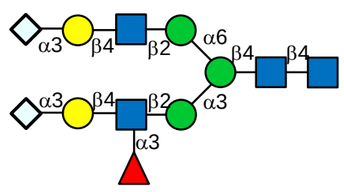
N133G



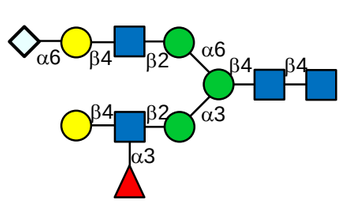
N134G



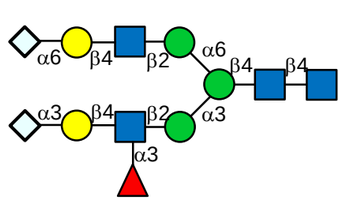
N135G



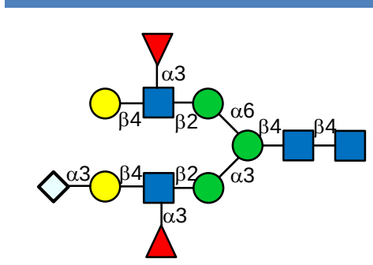
N144G



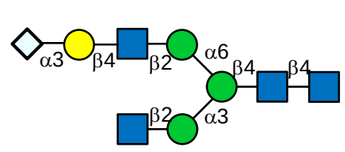
N145G



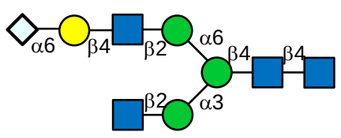
N155G



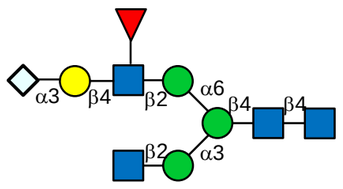
N212G



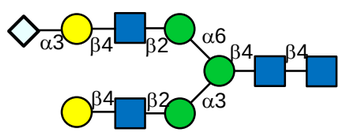
N213G



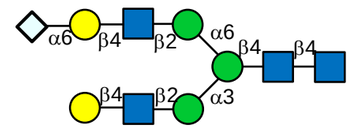
N215G



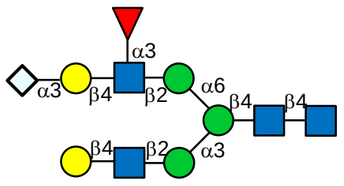
N222G



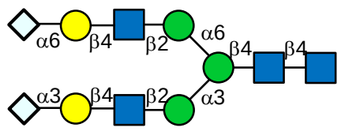
N223G



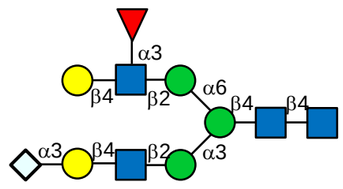
N225G



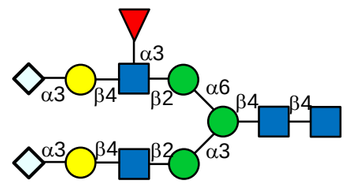
N233G



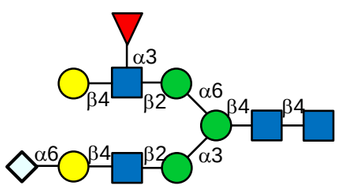
N234G



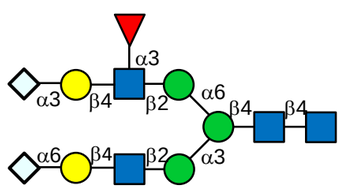
N235G



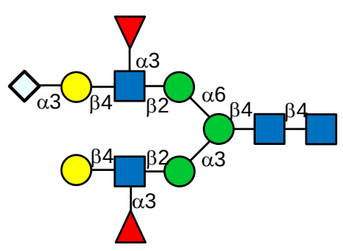
N244G



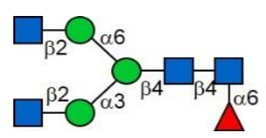
N245G



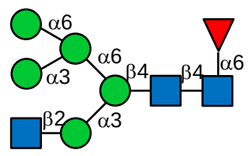
N255G



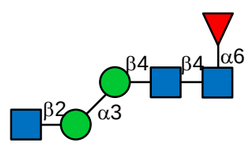
N6000



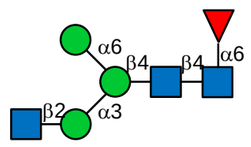
N06010



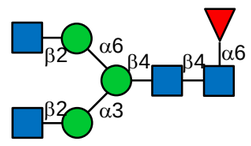
N6020



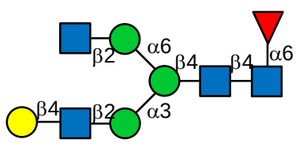
N6030



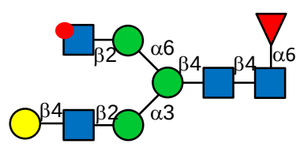
N6110



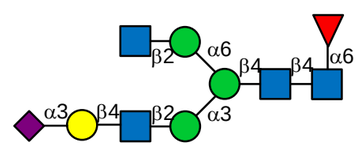
N6111



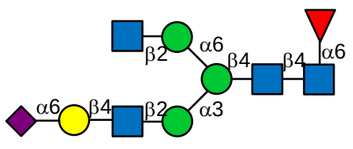
N6111a



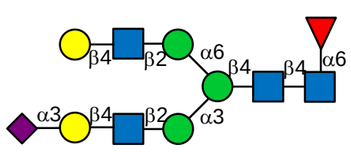
N6112



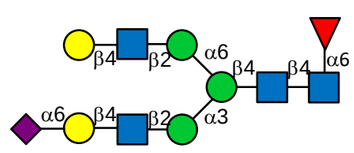
N6113



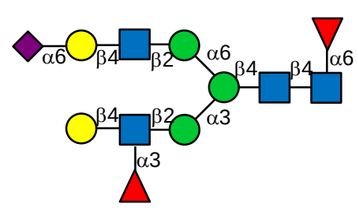
N6122



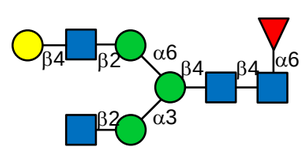
N6123



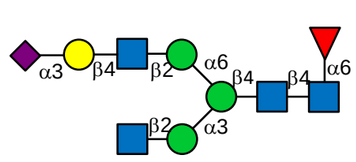
N6144



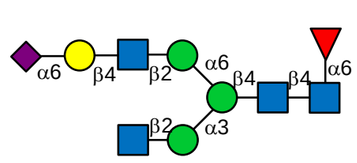
N6211



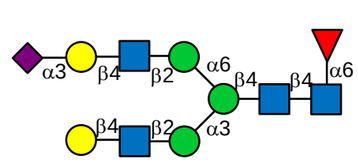
N6212



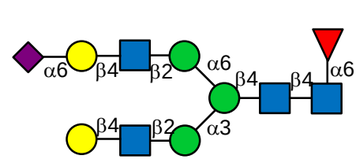
N6213



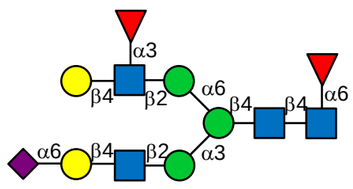
N6222



N6223

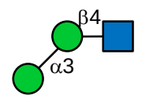


N6244

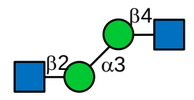


NO001

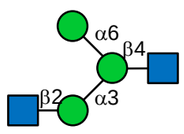
NO002



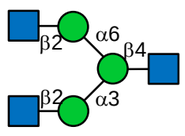
NO003



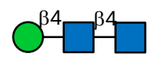
NO004



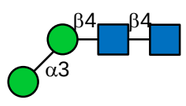
NO005



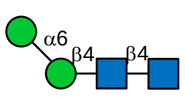
M10000



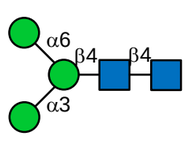
M21000



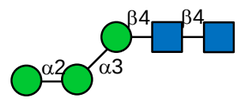
M20100



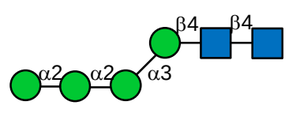
M31100



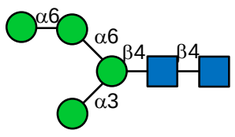
M32000



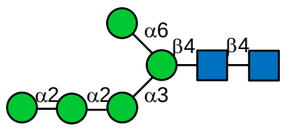
M43000



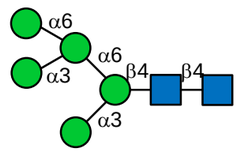
M41101



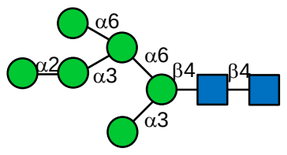
M53100



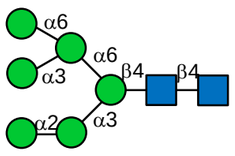
M51111



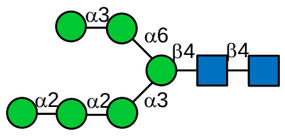
M61121



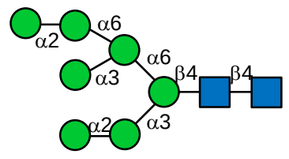
M62111



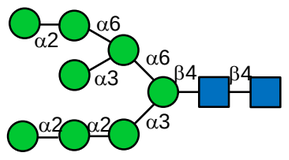
M63100



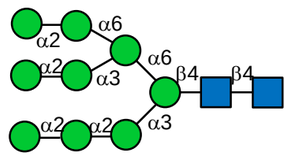
M72112



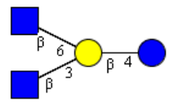
M83112



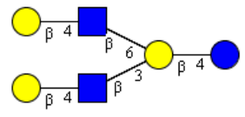
M93122



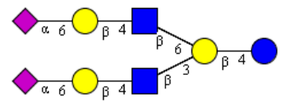
HMO1



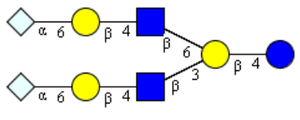
HMO2



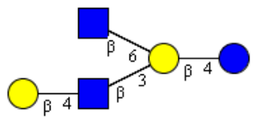
HMO3



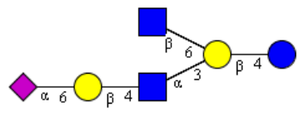
HMO4



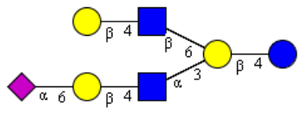
HMO5



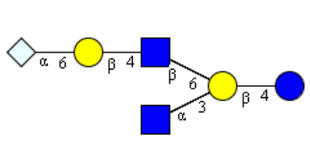
HMO6



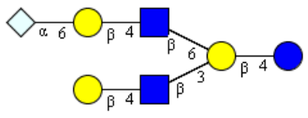
HMO7



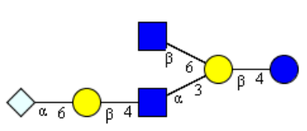
HMO8



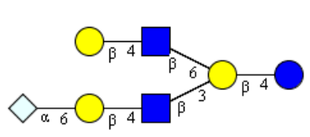
HMO9



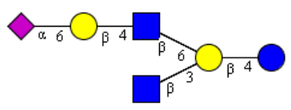
HMO10



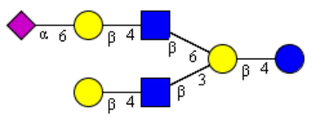
HMO11



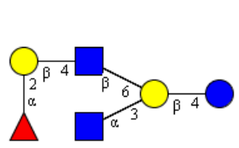
HMO12



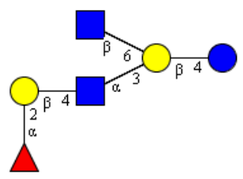
HMO13



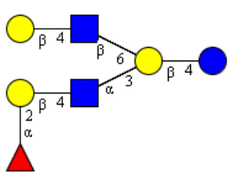
HMO14



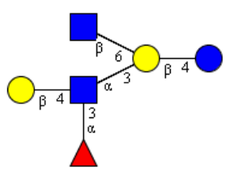
HMO15



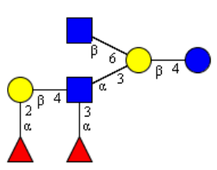
HMO16



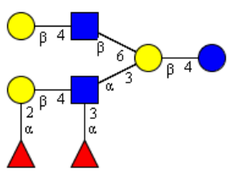
HMO17



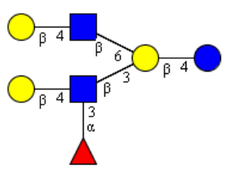
HMO18



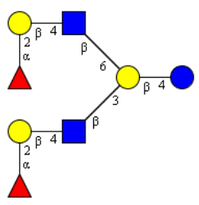
HMO19



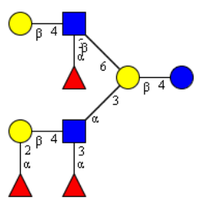
HMO20



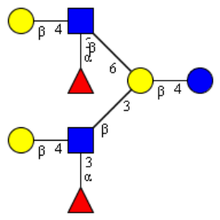
HMO21



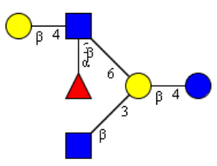
HMO22



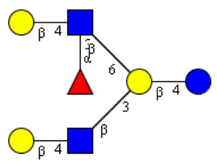
HMO23



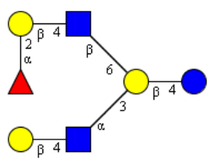
HMO24



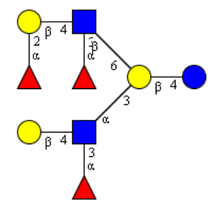
HMO25



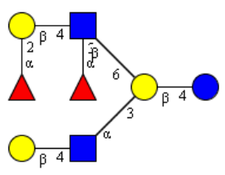
HMO26



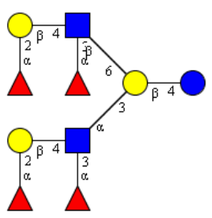
HMO27



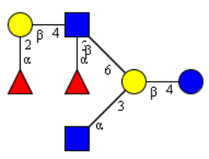
HMO28



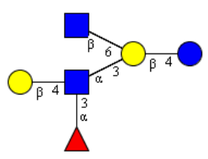
HMO29



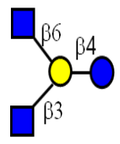
HMO30



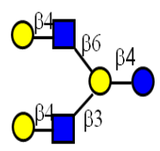
HMO31



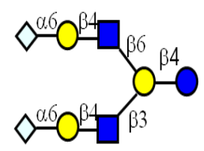
H0100



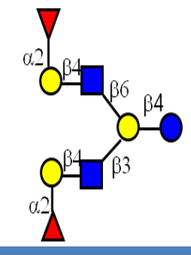
H0101



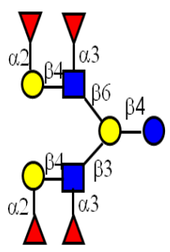
H0103



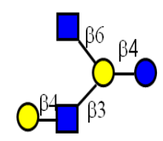
H0105



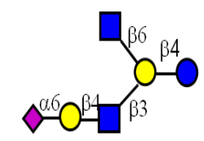
H0106



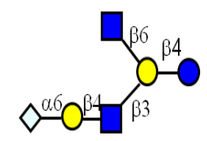
H0200



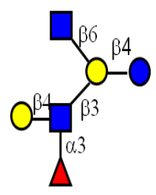
H0201



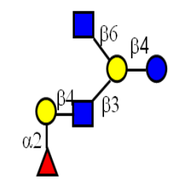
H0202



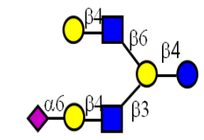
H0203



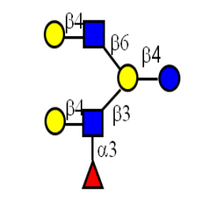
H0204



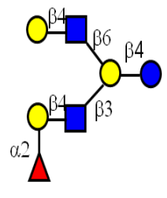
H0205



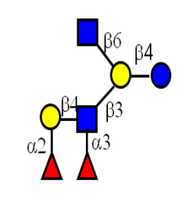
H0207



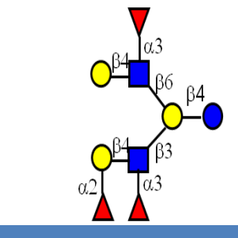
H0208



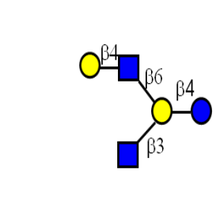
H0209



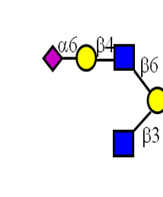
H0210



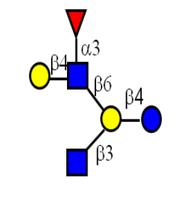
H0300



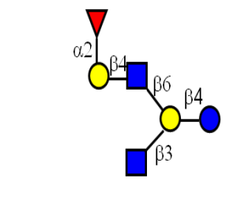
H0301



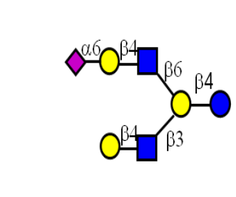
H0303



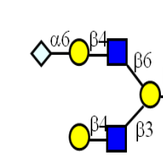
H0304



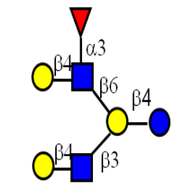
H0305



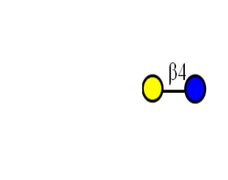
H0306



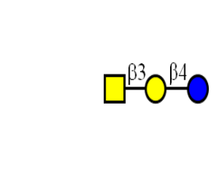
H0307



H0400



H0402



H0403

H0404

H0405

H0406

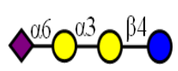
H0407

H0408

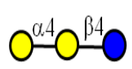
H0409

H0410

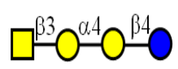
H0411



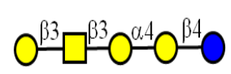
H0500



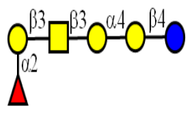
H0503



H0504

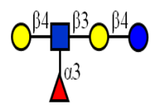


H0505

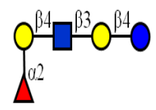


H0600

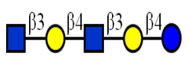
H0601



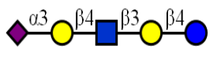
H0602



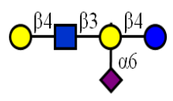
H0603



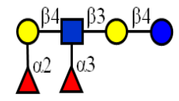
H0604



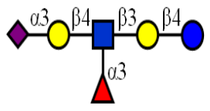
H0606



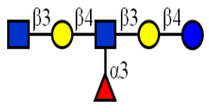
H0608



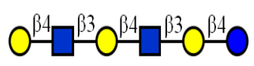
H0609



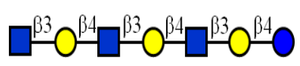
H0610



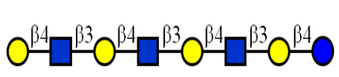
H0700



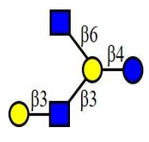
H0701



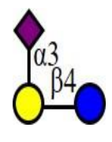
H0800



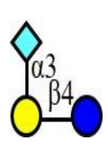
H0900



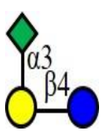
L1001



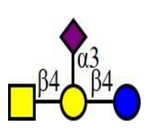
L1002



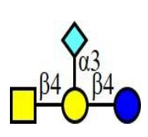
L1003



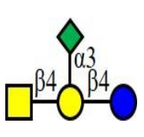
L1011



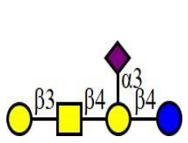
L1012



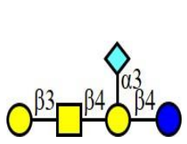
L1013



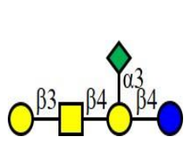
L1021



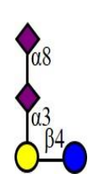
L1022



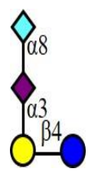
L1023



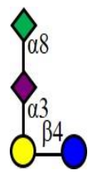
L1201



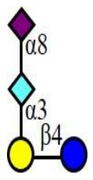
L1202



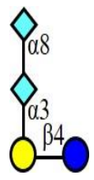
L1203



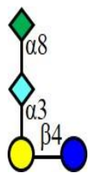
L1204



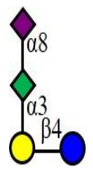
L1205



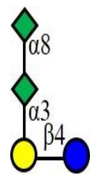
L1206



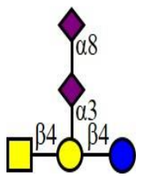
L1207



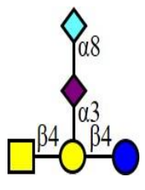
L1209



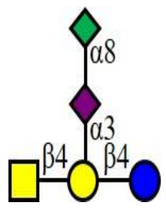
L1211



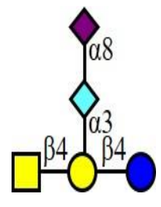
L1212



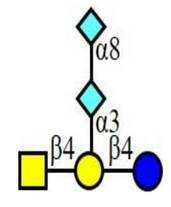
L1213



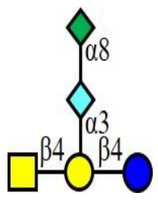
L1214



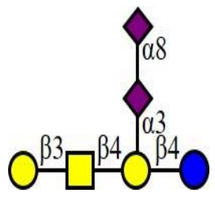
L1215



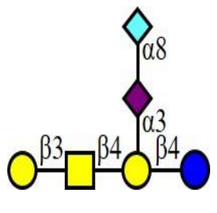
L1216



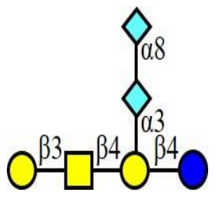
L1221



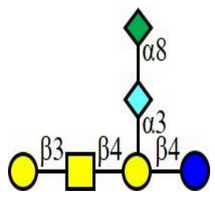
L1222



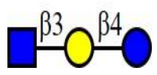
L1225



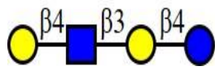
L1226



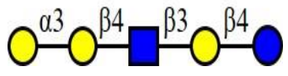
L2000



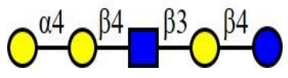
L2100



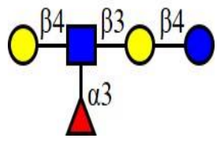
L2101



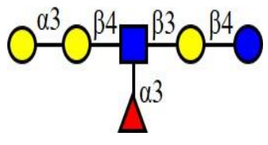
L2102



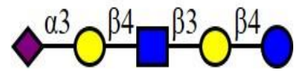
L2103



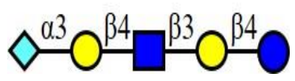
L2104



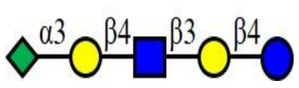
L2111



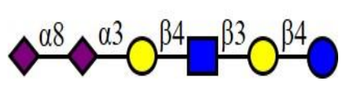
L2112



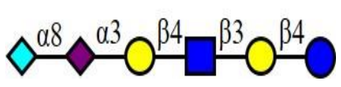
L2113



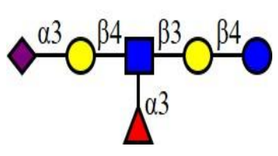
L2121



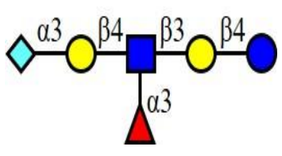
L2122



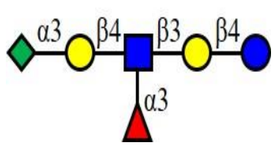
L2131



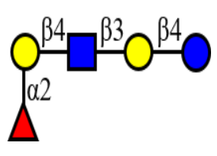
L2132



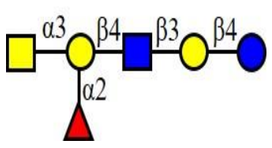
L2133



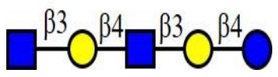
L2191



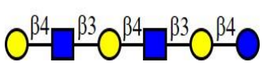
L2192



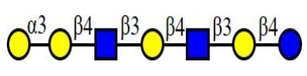
L2200



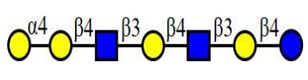
L2300



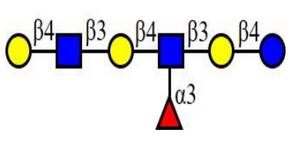
L2301



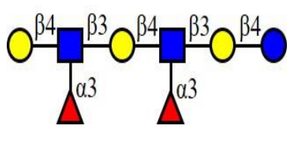
L2302



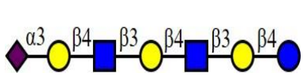
L2303



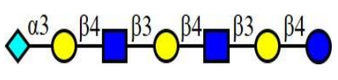
L2304



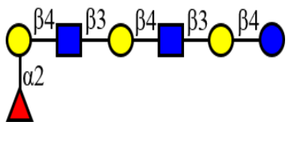
L2311



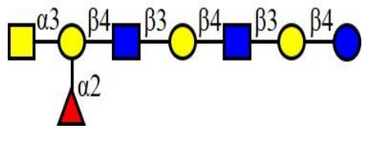
L2312



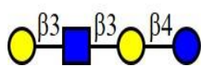
L2391



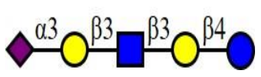
L2392



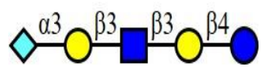
L2900



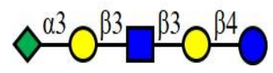
L2911



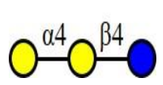
L2912



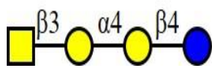
L2913



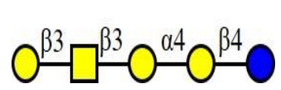
L3100



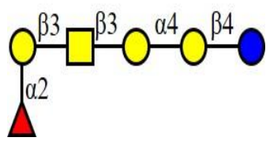
L3101



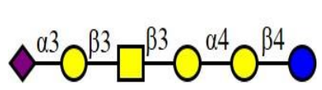
L3102



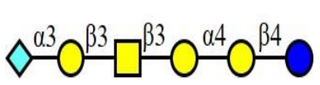
L3103



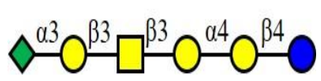
L3111



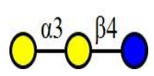
L3112



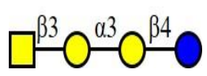
L3113



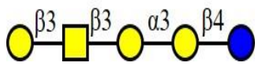
L3200



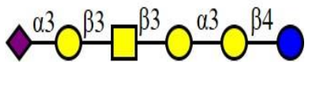
L3201



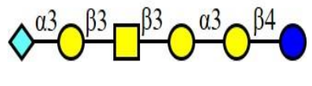
L3202



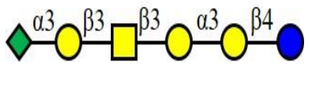
L3211



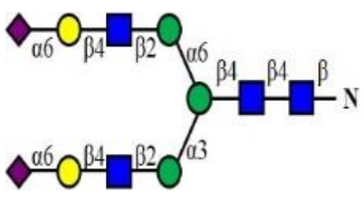
L3212



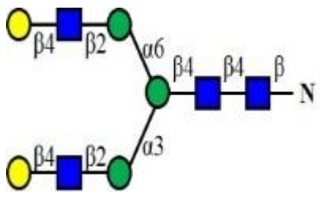
L3213



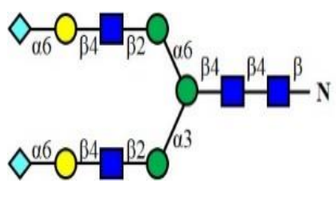
TE001



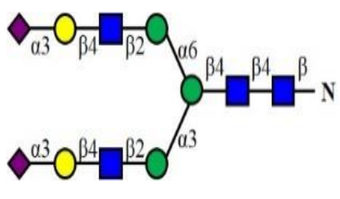
TE002



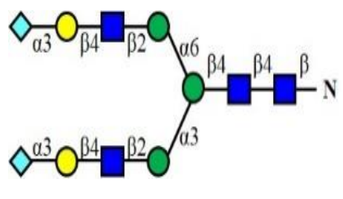
TE003



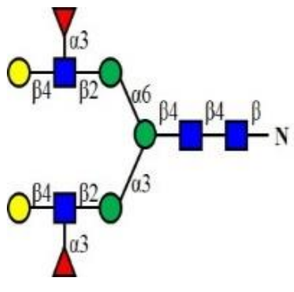
TE004



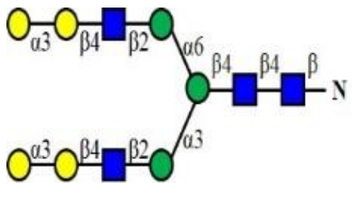
TE005



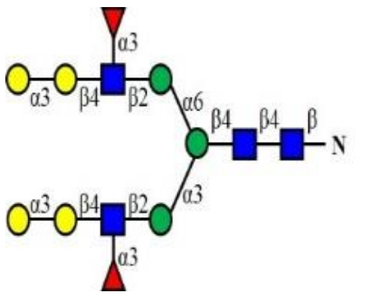
TE006



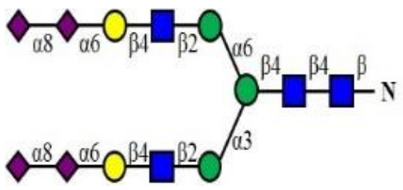
TE007



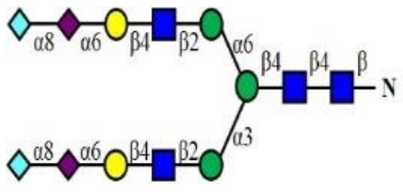
TE008



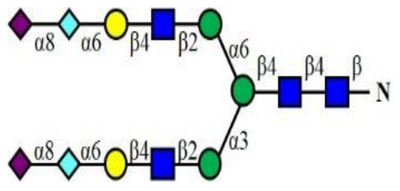
TE009



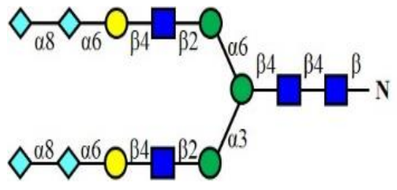
TE010



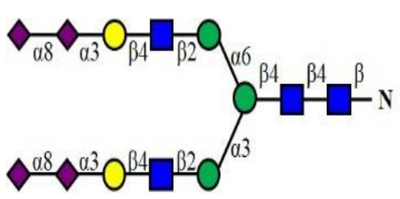
TE011



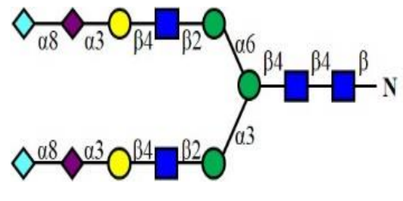
TE012



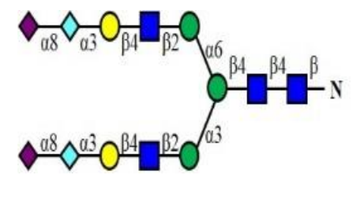
TE013



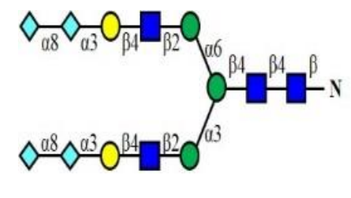
TE014



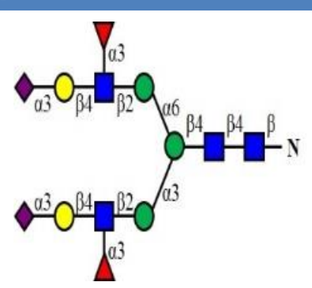
TE015



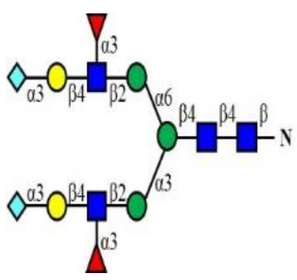
TE016



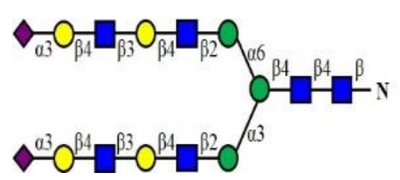
TE017



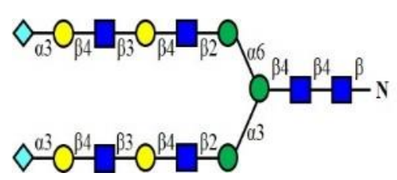
TE018



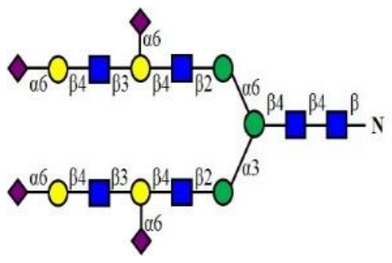
TE019



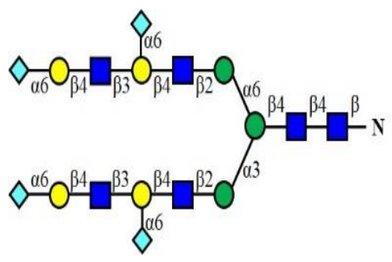
TE020



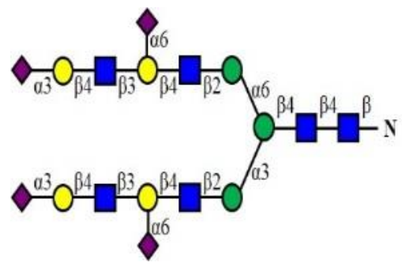
TE021



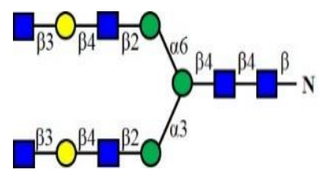
TE022



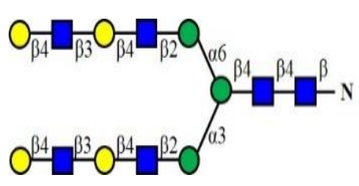
TE023



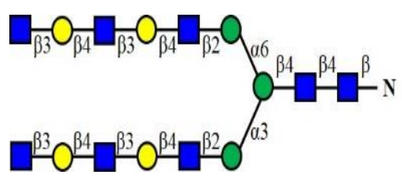
TE024



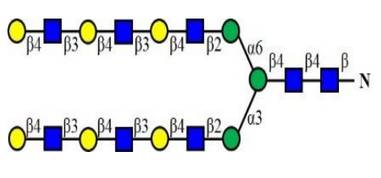
TE025



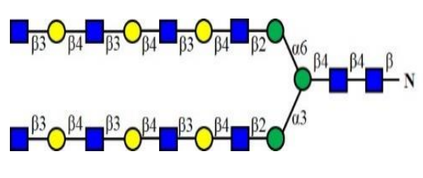
TE026



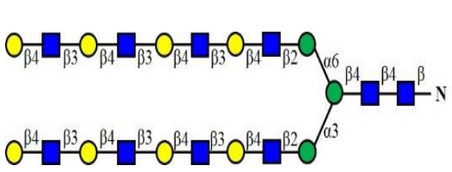
TE027



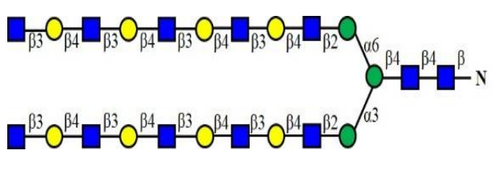
TE028



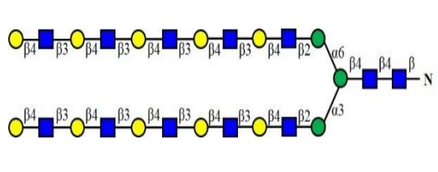
TE029



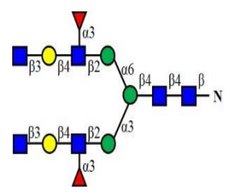
TE030



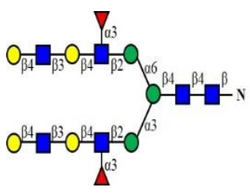
TE031



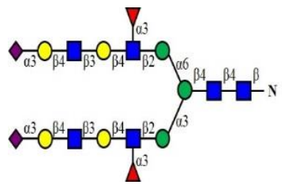
TE032



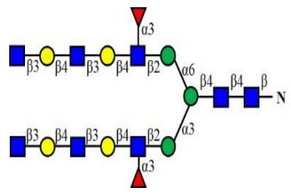
TE033



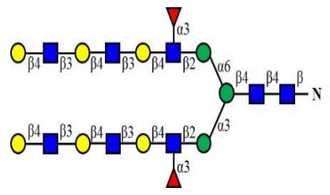
TE034



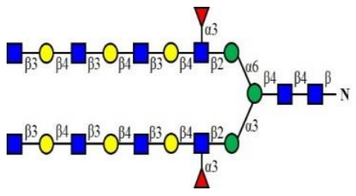
TE035



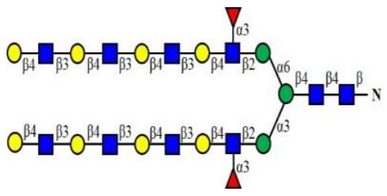
TE036



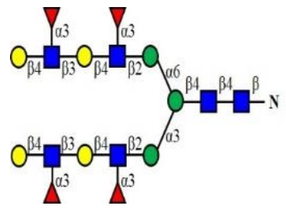
TE037



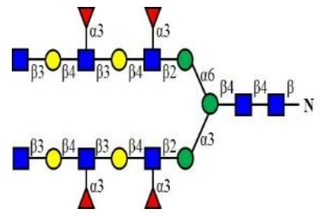
TE038



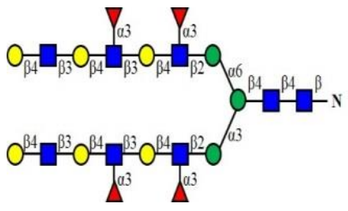
TE039



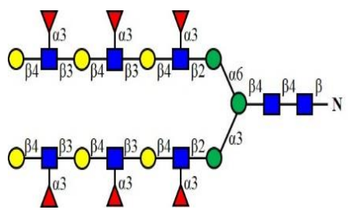
TE040



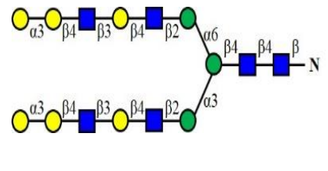
TE041



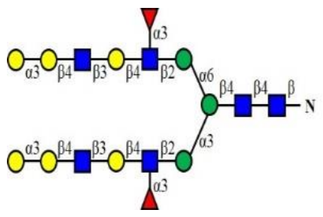
TE042



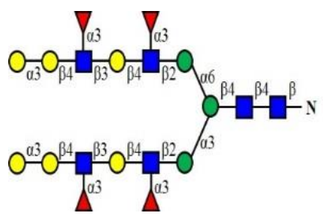
TE043



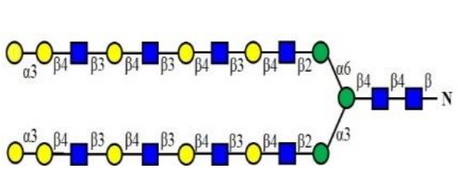
TE044



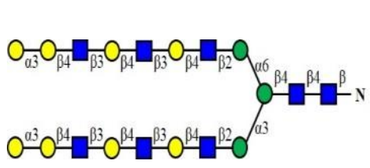
TE045



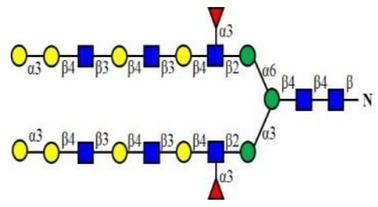
TE046



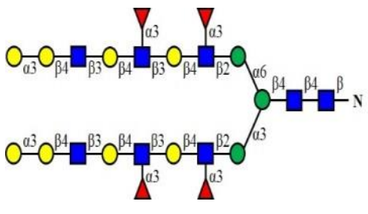
TE047



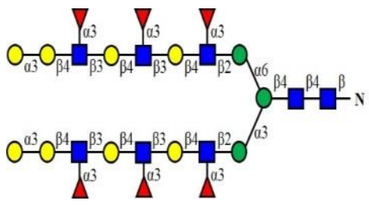
TE048



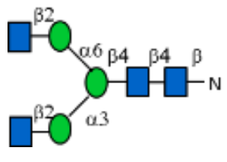
TE049



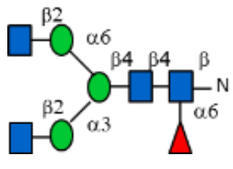
TE050



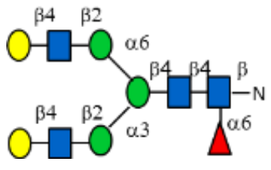
TE051



TE052

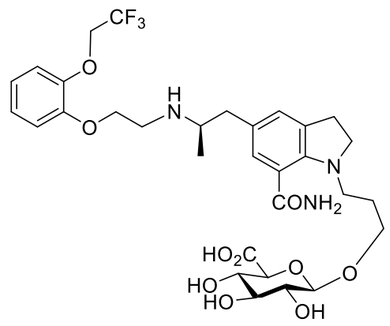


TE053



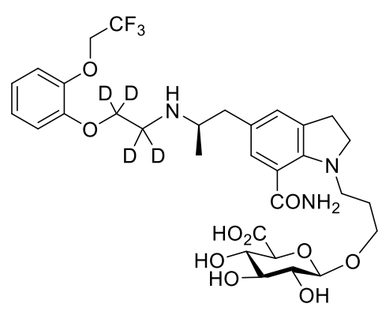
Glucuronidation is often involved in xenobiotic metabolism of substances such as drugs, pollutants, bilirubin, androgens, estrogens, mineralocorticoids, fatty acid derivatives, retinoids, and bile acids. These linkages involve glycosidic bonds. Chemily has excellent experience with glucuronidation/carbohydrate synthesis. Contact us at sales@chemilyus.com.

G00001 Silodosin β-D-Glucuronide



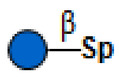
$C_{31}H_{40}F_3N_3O_{16}$; MW: 671.66	
CAS:	879396-70-0
Package:	1 mg, 5 mg, 25 mg, 50 mg, 100 mg

G00002 Silodosin β-D-Glucuronide-*d*4

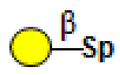


$C_{31}H_{36}D_4F_3N_3O_{16}$; MW: 675.68	
CAS:	
Package:	1 mg, 5 mg, 25 mg, 50 mg, 100 mg

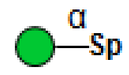
F01 β-Glc-Sp



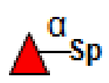
F02 β-Gal-Sp



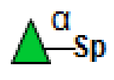
F03 α-Man-Sp



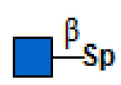
F04 α-L-Fuc-Sp



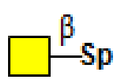
F05 α-L-Rham-Sp



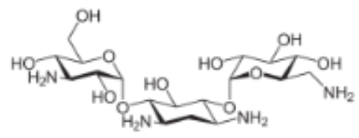
F06 β-GlcNAc-Sp



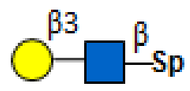
F07 β-GalNAc-Sp



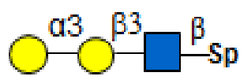
F08 Tobramycin



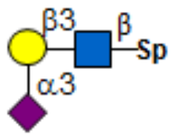
F09 Gal-β1,3-GlcNAc-β-Sp



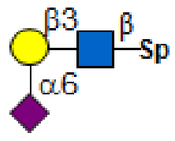
F10 Gal-α1,3-Gal-β1,3-GlcNAc-β-Sp



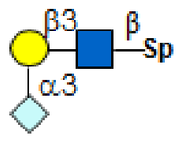
F11 Neu5Ac-α2,3-Gal-β1,3-GlcNAc-β-Sp



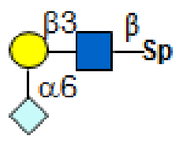
F12 Neu5Ac-α2,6-Gal-β1,3-GlcNAc-β-Sp



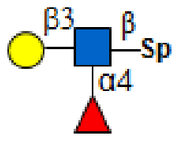
F13 Neu5Gc-α2,3-Gal-β1,3-GlcNAc-β-Sp



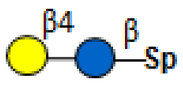
F14 Neu5Gc-α2,6-Gal-β1,3-GlcNAc-β-Sp



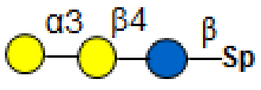
F15 Gal-β1,3-(Fuc-α1,4)-GlcNAc-β-Sp



F16 Gal-β1,4-Glc-β-Sp



F17 Gal-α1,3-Gal-β1,4-Glc-β-Sp

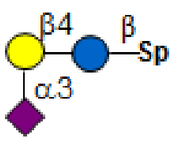


F18 Gal-α1,4-Galβ-1,4-Glc-β-Sp

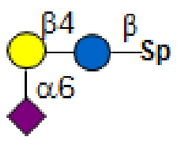
F19 GlcNAc-β1,3-Gal-β1,4-Glc-β-Sp

F20 GalNAc-β1,3-Gal-β1,4-Glc-β-Sp

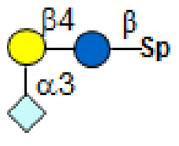
F21 Neu5Ac-α2,3-Gal-β1,4-Glc-β-Sp



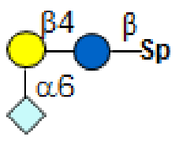
F22 Neu5Ac-α2,6-Gal-β1,4-Glc-β-Sp



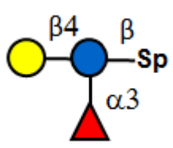
F23 Neu5Gc-α2,3-Gal-β1,4-Glc-β-Sp



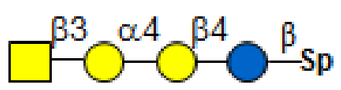
F24 Neu5Ac-α2,6-Gal-β1,4-Glc-β-Sp



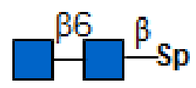
F25 Gal-β1,4-(Fuc-α1,3)-Glc-β-Sp



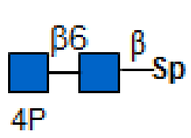
F26 GalNAc-β1,3-Gal-α1,4-Gal-β1,4-Glc-β-Sp



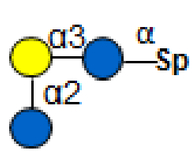
F27 GlcNAc-β1,6-GlcNAc-β-Sp



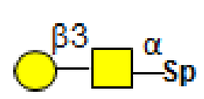
F28 4-P-GlcNAc-β1,6-GlcNAc-β-Sp



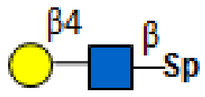
F29 Glc-α1,2-Gal-α1,3-Glc-α-Sp



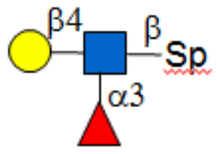
F30 Gal-β1,3-GalNAc-α-Sp



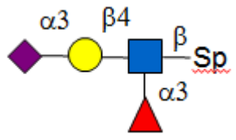
F31 Gal-β1,4-GlcNAc-β-Sp



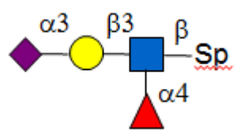
F32 Gal-β1,4 -(Fuc-α1,3)-GlcNAc-β-Sp



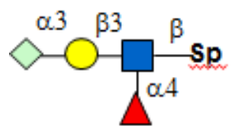
F33 Neu5Ac-α2,3-Gal-β1,3 -(Fuc-α1,4)-GlcNAc-β-Sp



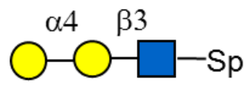
F34 Neu5Ac-α2,3-Gal-β1,3 -(Fuc-α1,4)-GlcNAc-β-Sp



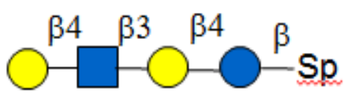
F35 Neu5Gc-α2,3-Gal-β1,3 -(Fuc-α1,4)-GlcNAc-β-Sp



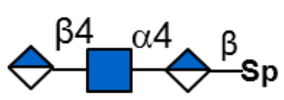
F36 Gal-α1,4-Gal-β1,3-GlcNAc-β-Sp



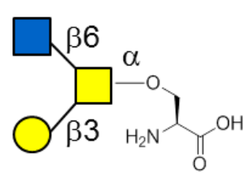
F37 Gal-β1,4-GlcNAc-β1,3 -Gal-β1,4-Glc-β-Sp



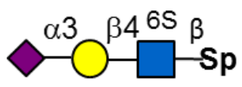
F38 GlcA-β1,4-GlcNAc-α1,4-GlcA-β-SP



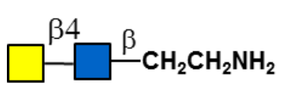
F39 GlcNAc-β1,6-(Gal-β1,3)-GalNAc-α-O-Ser



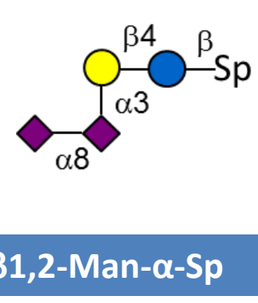
F40 Neu5Ac-α2,3-Gal-β1,4-(6S) GlcNA-Sp



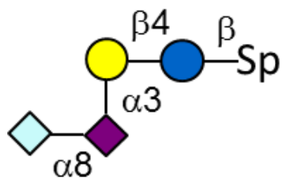
F41 GalNAc-β1,4-GlcNAc-β $CH_2CH_2NH_2$



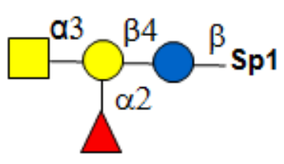
F42 Neu5Ac-α2,8-Neu5Ac-α2,3-Gal β1,4-Glc-β-Sp



F43 Neu5Gc-α2,8-Neu5Ac-α2,3-Gal β1,4-Glc-β-Sp

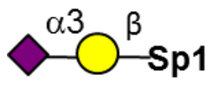


F44 GalNAc-α1,3 -(Fuc-α1,2)-Gal-β1,4-Glc-β-Sp1

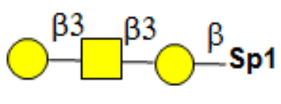


F45 GlcNAc-β1,2-Man-α-Sp

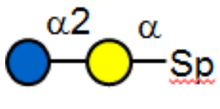
F46 Neu5Ac-α2,3-Gal-β-Sp1



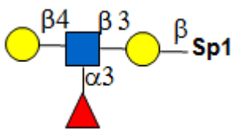
F47 Gal-β1,3 -GalNAc-β1,3-Gal-β-Sp1



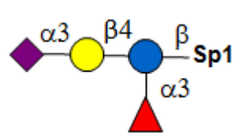
F48 Glc-α1,2-Gal-α-Sp



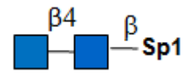
F49 Gal-β1,4 -(Fuc-α1,3)-GlcNAc-β1,3-Gal-β-Sp1



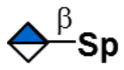
F50 Neu5Ac-α2,3-Gal-β1,4 -(Fuc-α1,3)-Glc-β-Sp1



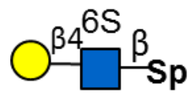
F51 GlcNAc-β1,4-GlcNAc-β-Sp1



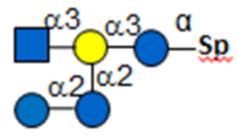
F52 D-GlcA-Sp



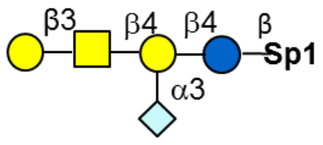
F53 Gal-β1,4-(6S) GlNAc-β-Sp



F54 GlNAc-α1,3-(Glc-α1,2-Glc-α1,2)Gal-α1,3-Glc-α-Sp

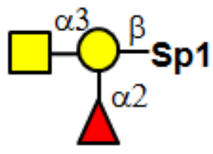


F55 Gal β1,3-GalNAc-β1,4-(Neu5Gc-α2,3)-Gal β1,4-Glc-β-SP1

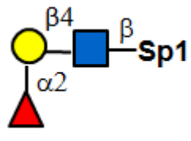


F56 Sisomicin sulfate

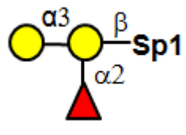
F57 GalNAc-α1,3 -(Fuc-α1,2)-Gal-β-Sp 1



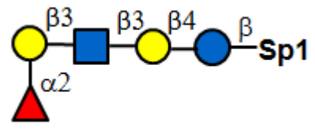
F58 Fuc-α1,2-Gal-β1,4- GlcNAc-β-Sp1



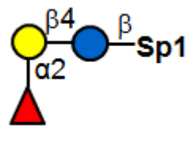
F59 Gal-α1,3 -(Fuc-α1,2)-Gal-β-Sp 1



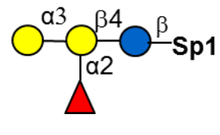
F60 Fuc-α1,2-Gal-β1,3-GlcNAc-β1,3 -Gal-β1,4-Glc-β-Sp



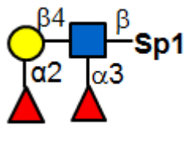
F61 Fuc-α1,2-Gal-β1,4-Glc-β-Sp1



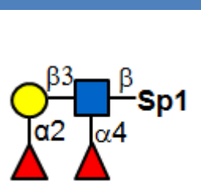
F62 Gal-α1,3 -(Fuc-α1,2)- Gal-β1,4-Glc-β-Sp 1



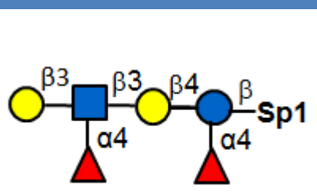
F63 (Fuc-α1,2)-Gal-β1,4 -(Fuc-α1,3)-GlcNAc-β-Sp1



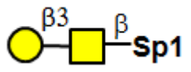
F64 (Fuc-α1,2)-Gal-β1,3 -(Fuc-α1,4)-GlcNAc-β-Sp1



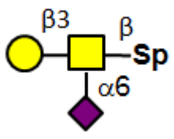
F65 Gal-β1,3-(Fuc-α1,4)-GlcNAc-β1,3-Gal-β1,4 -(Fuc-α1,4)-Glc-β-Sp1



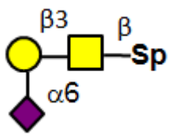
F66 Gal-β1,3-GalNAc-β-Sp 1



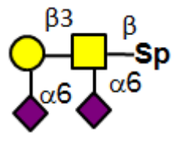
F67 Gal-β1,3-(Neu5Ac-α2,6)-GalNAc-β-Sp



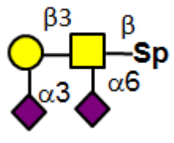
F68 Neu5Ac-α2,6-Gal β1,3-GalNAc-β-Sp



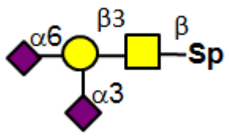
F69 Neu5Ac-α2,6-Gal β1,3-(Neu5Ac-α2,6)-GalNAc-β-Sp



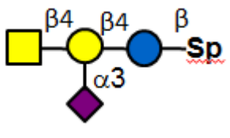
F70 Neu5Ac-α2,3-Gal β1,3-(Neu5Ac-α2,6-)-GalNAc-β-Sp



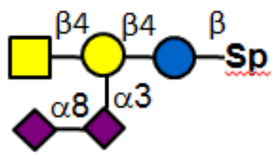
F71 Neu5Ac-α2,6-(Neu5Ac-α-2,3)-Gal β1,3-GalNAc-β-Sp



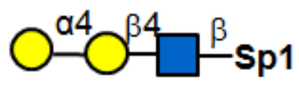
F72 GalNAc-β1,4-(Neu5Ac-α2,3)-Gal β1,4-Glc-β-Sp



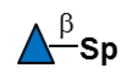
F73 GalNAc-β1,4-(Neu5Ac-α2,8-Neu5Ac-α2,3)-Gal β-1,4-Glc-β-Sp



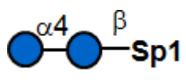
F74 Gal-α1,4-Gal β1,4-GlcNAc-β-Sp1



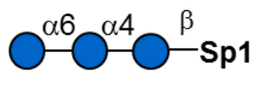
F75 D-Rhamnose-sp



F76 Glc-α1,4-Glc-β-Sp1

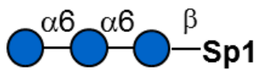


F77 Glc-α1,6-Glc-α1,4-Glc-β-Sp1

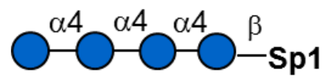


F78 Maltotriose

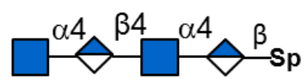
F79 Glc-α1,6-Glc-α1,6-Glc-β-Sp1



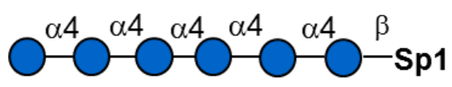
F80 Maltotetraose-β-Sp1



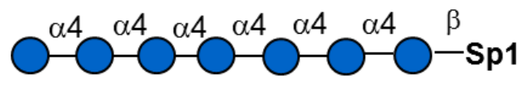
F81 GlcNAc-α1,4-GlcA-β-1,4-GlcNAc-α1,4-GlcA-b-SP



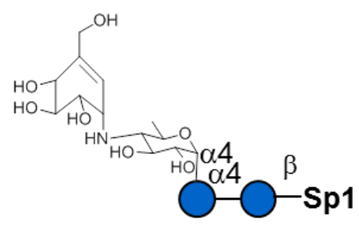
F82 Maltohexaose-β-Sp1



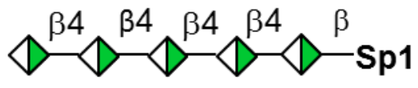
F83 Maltoheptaose-β-Sp1



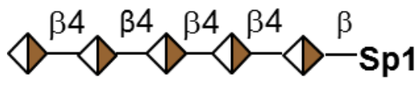
F84 Acarbose-β-Sp1



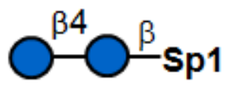
F85 D-pentamannuronic acid-β-Sp1



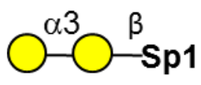
F86 L-pentaguluronic acid-β-Sp1



F87 D-cellose-β-Sp1

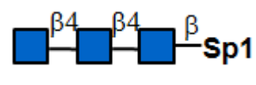


F88 Gal-α1,3-Gal-β-Sp1

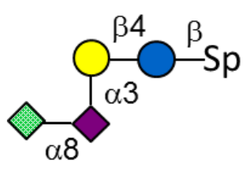


F89 β1,4-Xylotetrose

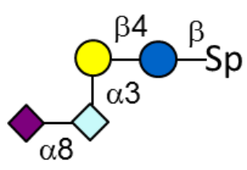
F90 Chitin-trisaccharide



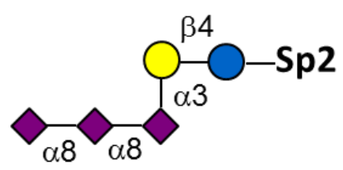
F91 KDN-α2,8-Neu5Ac-α2,3-Gal β1,4-Glc-β-Sp



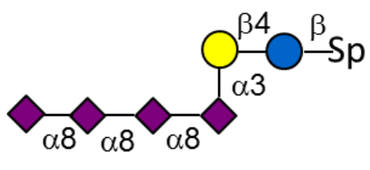
F92 Neu5Ac-α2,8-Neu5Gc-α2,3-Gal β1,4-Glc-β-Sp



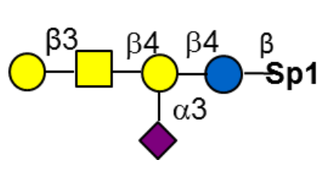
F93 α2,8-Neu5Ac-α2,8-Neu5Ac-α2,8-Neu5Ac-α2,3-Gal-β1,4-Glc-Sp2



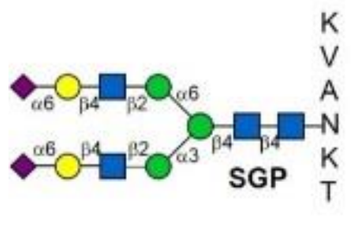
F94 Neu5Ac-α2,8-Neu5Ac-α2,8-Neu5Ac-α2,8 Neu5Ac-α2,3-Gal β1,4-Glc-β-Sp



F95 Gal β1,3-GalNAc-β1,4-(Neu5Ac-α2,3)-Gal β1,4-Glc-β-SP1

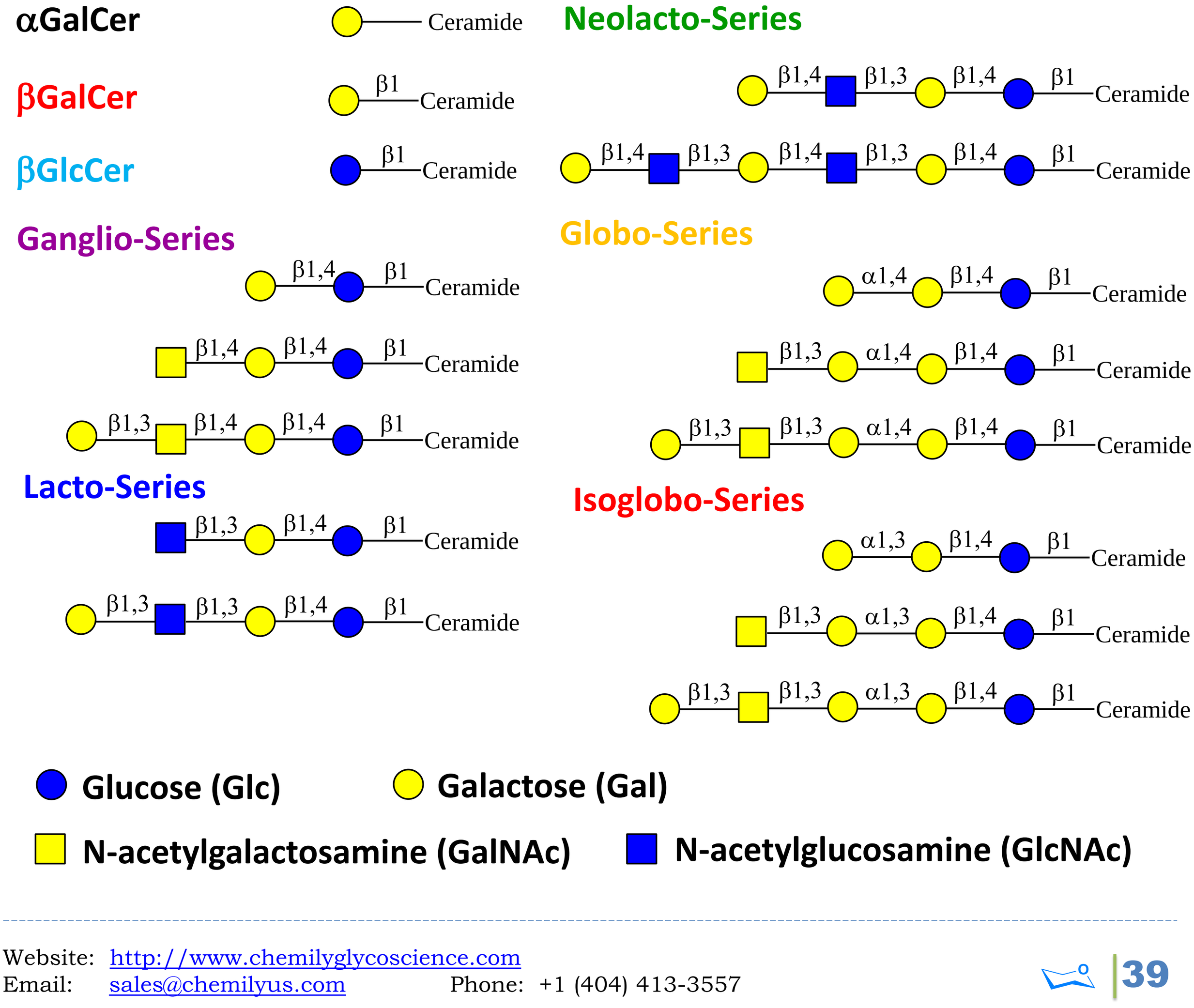


F96 SGP

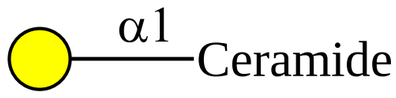


Structure

Glycolipid, by definition, refers to a molecule containing a glycan linked to a lipid aglycone. They naturally exist in many different forms, including glycosphingolipids, glycoglycerolipids, glycosylphosphatidylinositols, and lipopolysaccharides, etc. They are found in all living organisms as membrane-bound molecules. In most Gram-negative species, lipopolysaccharides form the outer leaflet of the outer membrane. They are directly associated with immunogenicity. In higher animals, glycosphingolipids can take up to 20% of the membrane lipids. Their functions include mediating cell-cell interactions and modulating activities of proteins in the same plasma membranes. The basic structure for a glycosphingolipid is a monosaccharide, usually glucose or galactose, attached directly to a ceramide molecule and resulting in, respectively, glucosylceramide (glucocerebroside; GlcCer) or galactosylceramide (galactocerebroside; GalCer).

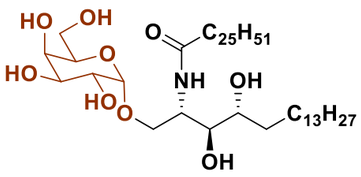


α-Galactosylceramide (α-GalCer) or the common name of KRN7000 was isolated from an extract of the Okinawan marine sponge Agelas mauritianus. The Alpha-GalCer structure consist of a galactose combined with a ceramide in an alpha-configuration. Alpha-GalCer is a specific ligand for human and mouse natural killer T (NKT) cells and KRN7000 exhibits potent anti-tumor activity with murine in vivo experiments including subcutaneous implanted model and metastatic models in the liver and lung. In the liver metastatic models, treatment with KRN7000 suppressed the growth of tumors and prolonged the survival term of the tumor-bearing mice. KRN7000 has been reported to show various immunological effects in infectious diseases, autoimmune disease and graft verse host disease in mice.

αGalCer 

GSL001 (2*S*,3*S*,4*R*)-1-*O*-(α-D-Galactopyranosyl)-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

Synonym: **α-GalCer, α-Galactosylceramide, KRN7000**



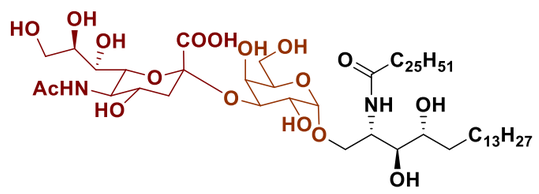
Chemical Formula:	$C_{50}H_{99}NO_9$
Molecular Weight:	858.32
CAS No.:	158021-47-7
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Selected References:

1. Aline Banchet-Cadeddu et.al “The stimulating adventure of KRN 7000” *Organic & Biomolecular Chemistry*, 9(9), 3080-3104 (2011)
2. Linda V Sinclair et. al “Control of amino-acid transport by antigen receptors coordinates the metabolic reprogramming essential for T cell differentiation” *Nature Immunology*, 14(5), 500-508 (2013)

GSL002 Neu5Acα2,3-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

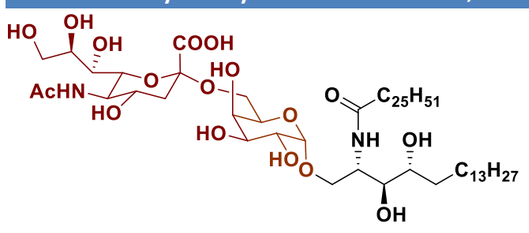
Synonym: Neu5Acα2,3-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{116}N_2O_{17}$
Molecular Weight:	1149.60
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL003 Neu5Acα2,6-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

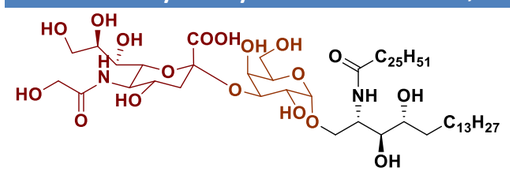
Synonym: Neu5Acα2,6-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{116}N_2O_{17}$
Molecular Weight:	1149.60
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL004 Neu5Gcα2,3-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

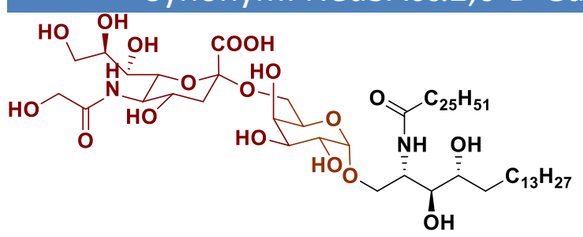
Synonym: Neu5Gcα2,3-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{116}N_2O_{18}$
Molecular Weight:	1165.60
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL005 Neu5Gcα2,6-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

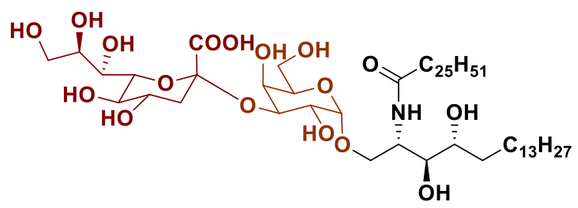
Synonym: Neu5Acα2,6-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{116}N_2O_{18}$
Molecular Weight:	1165.60
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL006 KDNα2,3-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

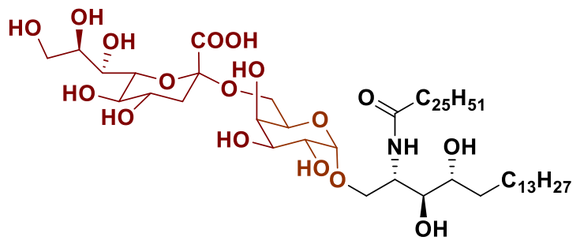
Synonym: KDNα2,3-D-Galactosyl Ceramide



Chemical Formula:	$C_{59}H_{113}NO_{17}$
Molecular Weight:	1108.54
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

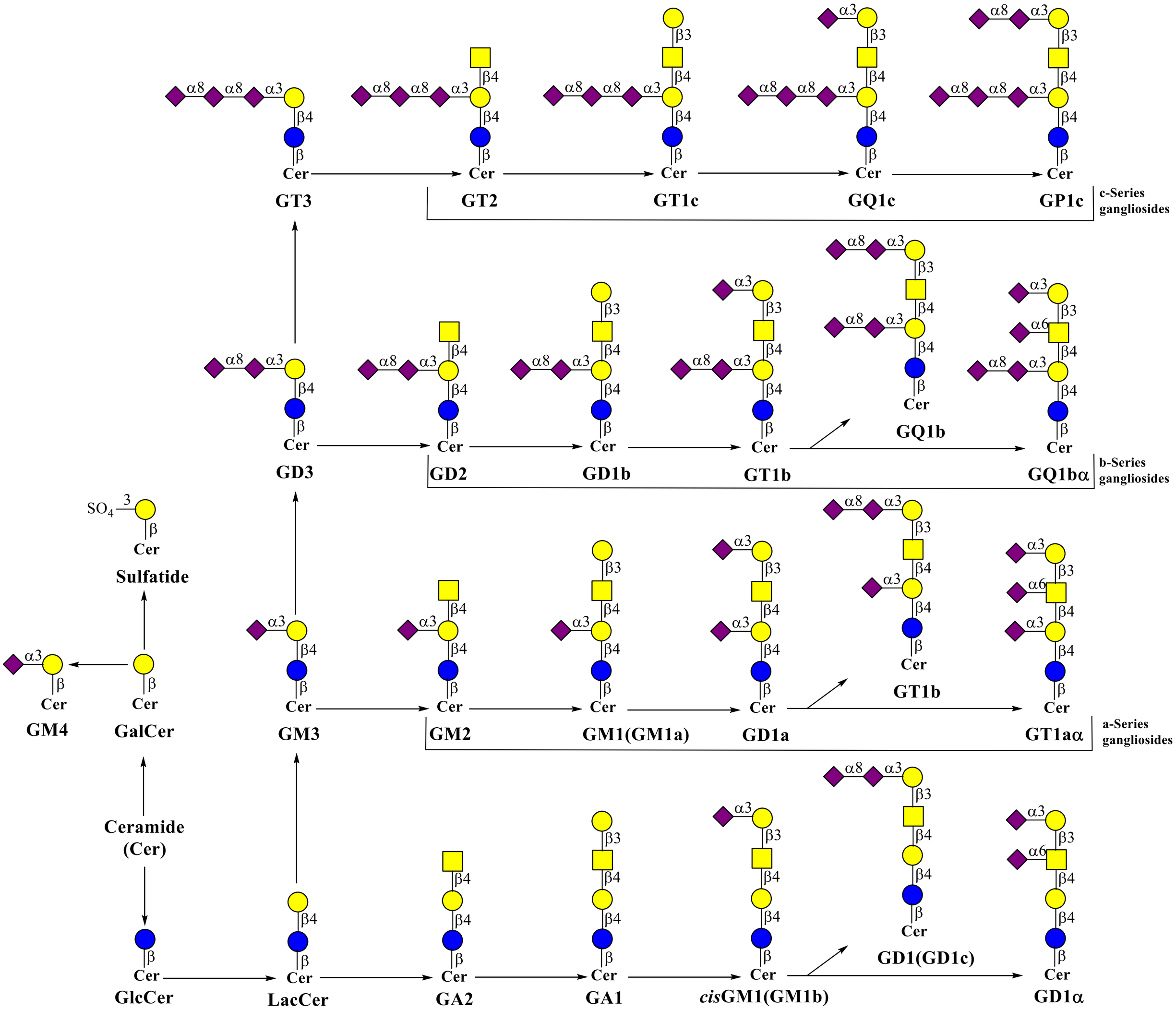
GSL006 KDNα2,6-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

Synonym: KDNα2,3-D-Galactosyl Ceramide



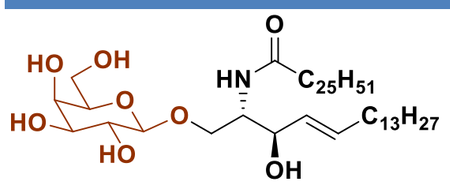
Chemical Formula:	$C_{59}H_{113}NO_{17}$
Molecular Weight:	1108.54
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Gangliosides are a group of sialylated GSLs that are presented in all tissues but are particularly abundant in the nervous system where they affect neuronal plasticity during development, adulthood and aging. They regulate immunological function and some viruses and pathogenic bacteria adhesins use gangliosides on the host cell surface to bind and invade epithelial cells. Lack of functional ganglioside metabolic genes leads to rare genetic disorders such as lysosomal GSL storage diseases. Aberrant expressing of gangliosides is associated with cancer progression. Therefore, some cancer-associated gangliosides have been developed as potential cancer markers, cancer vaccine， and immune-suppressants.



GSL101 (2*S*,3*S*,4*R*)-1-*O*-β-D-Galactopyranosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol

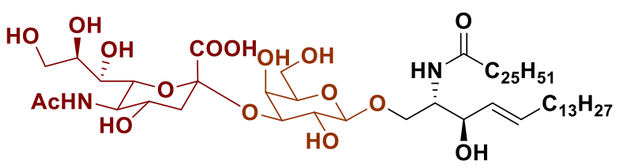
Synonym: β-GalCer, β-Galactosylceramide



Chemical Formula:	$C_{50}H_{97}NO_8$
Molecular Weight:	840.33
CAS No.:	148439-48-9
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL102 αNeu5Ac2,3-β-D-Galactopyranosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol

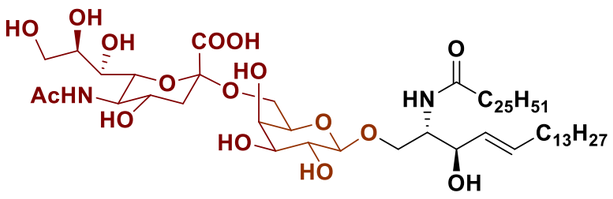
Synonym: GM4



Chemical Formula:	$C_{61}H_{114}N_2O_{16}$
Molecular Weight:	1131.58
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL103 αNeu5Ac2,6-β-D-Galactopyranosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol

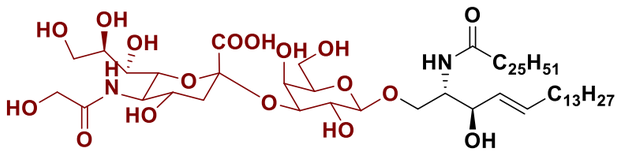
Synonym: Neu5Acα2,6-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{114}N_2O_{16}$
Molecular Weight:	1131.58
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL104 αNeu5Gc2,3-β-D-Galactopyranosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol

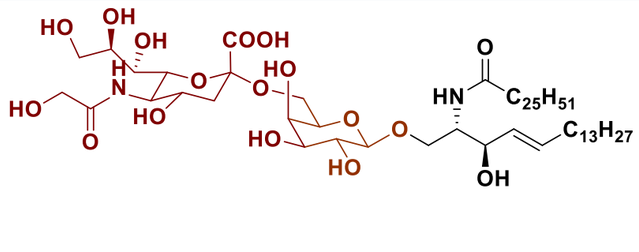
Synonym: αNeu5Gc2,3-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{114}N_2O_{17}$
Molecular Weight:	1147.58
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL105 αNeu5Gc2,6-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

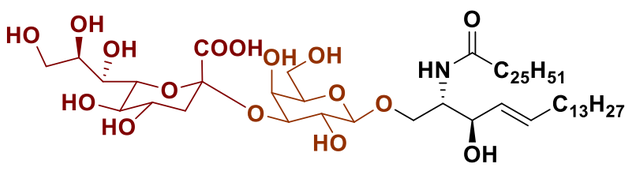
Synonym: Neu5Acα2,6-D-Galactosyl Ceramide



Chemical Formula:	$C_{61}H_{116}N_2O_{17}$
Molecular Weight:	1147.58
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

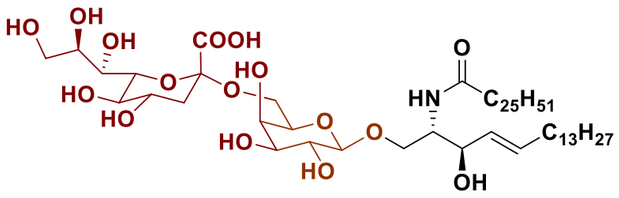
GSL106 αKDN2,3-β-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol

Synonym: KDNα2,3-D-Galactosyl Ceramide



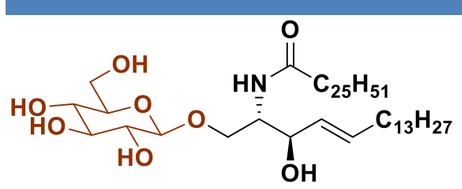
Chemical Formula:	$C_{59}H_{111}NO_{16}$
Molecular Weight:	1090.59
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL107 KDNα2,3-D-Galactopyranosyl-N-hexacosanoyl-2-amino-1,3,4-octadecanetriol
Synonym: KDNα2,3-D-Galactosyl Ceramide



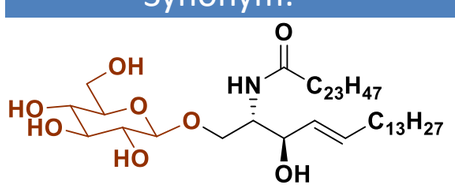
Chemical Formula:	$C_{59}H_{111}NO_{16}$
Molecular Weight:	1090.59
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL201 β-D-Glucopyranosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol
Synonym: β-GlcCer



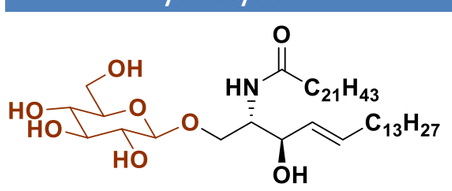
Chemical Formula:	$C_{50}H_{97}NO_8$
Molecular Weight:	840.33
CAS No.:	1346518-10-2
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL202 β-D-Glucopyranosyl-1,1'-N-Tetracosanoyl-2'-Tetracosanamide-4'-octadecene-1',3'-diol
Synonym:



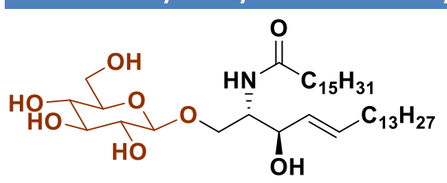
Chemical Formula:	$C_{48}H_{93}NO_8$
Molecular Weight:	812.27
CAS No.:	82014-84-4
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL203 β-D-Glucopyranosyl-1,1'-N-Docosanoyl-2'-Docosanamide-4'-octadecene-1',3'-diol
Synonym:



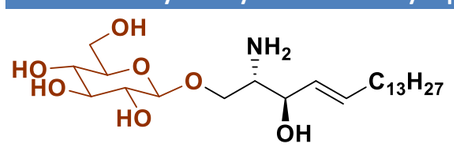
Chemical Formula:	$C_{46}H_{89}NO_8$
Molecular Weight:	784.22
CAS No.:	119242-44-3
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL204 β-D-Glucopyranosyl-1,1'-N-Hexadecanoyl-2'-Hexadecanamide-4'-octadecene-1',3'-diol
Synonym: D-Glucosyl-β-1,1'-N-palmitoylsphingosine



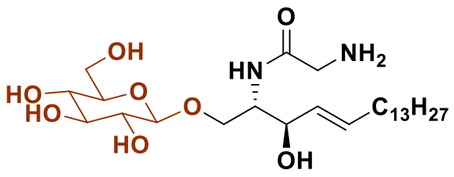
Chemical Formula:	$C_{40}H_{77}NO_8$
Molecular Weight:	700.06
CAS No.:	74365-77-8
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL205 β-D-Glucopyranosyl-1,1'-2'-amino-4'-octadecene-1',3'-diol
Synonym: Glucosylsphingosine



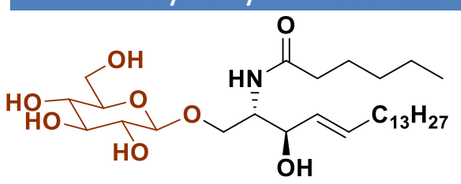
Chemical Formula:	$C_{24}H_{47}NO_7$
Molecular Weight:	461.64
CAS No.:	52050-17-6
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL206 N-Glycinated glucosylsphingosine
Synonym: N-Glycine glucopsychosine



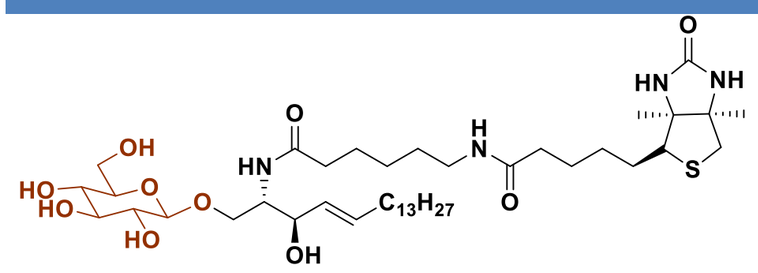
Chemical Formula:	$C_{26}H_{50}N_2O_8$
Molecular Weight:	518.69
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL207 N-Hexanoyl-glucosylceramide
Synonym: N-C6:0-Glucocerebroside



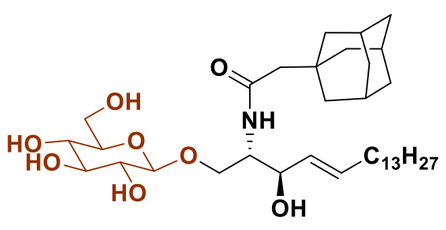
Chemical Formula:	$C_{30}H_{55}NO_8$
Molecular Weight:	559.79
CAS No.:	111956-46-8
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL208 N-Hexanoyl-biotin-glucosylceramide
Synonym: N-C6:0-Biotin-glucosylceramide



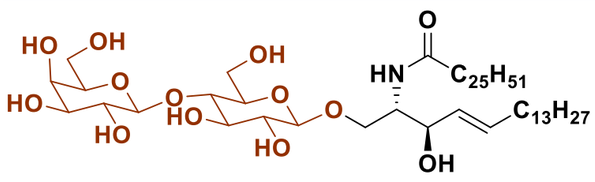
Chemical Formula:	$C_{42}H_{76}N_4O_{10}S$
Molecular Weight:	829.15
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL209 N-(1-Adamantaneacetyl)-glucosylceramide
Synonym:



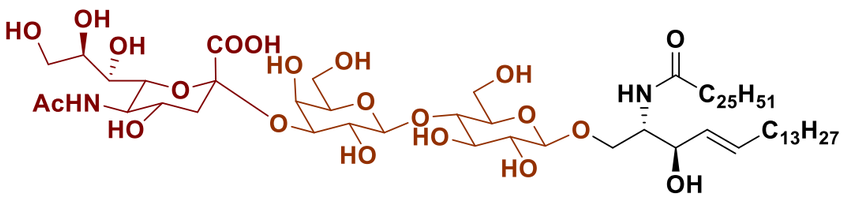
Chemical Formula:	$C_{36}H_{63}NO_8$
Molecular Weight:	637.90
CAS No.:	1314782-67-6
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL301 β-Lactosyl-1,1'-N-hexacosanoyl-2'-hexacosamide-4'-octadecene-1',3'-diol
Synonym: β-LacCer



Chemical Formula:	$C_{56}H_{107}NO_{13}$
Molecular Weight:	1002.47
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

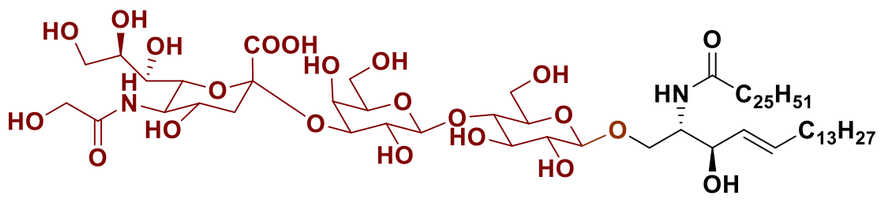
GSL302 Neu5Acα2,3Galβ1,4Glc Ceramide
Synonym: GM3



Chemical Formula:	$C_{67}H_{124}N_2O_{21}$
Molecular Weight:	1293.72
CAS No.:	1985644-13-0
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL303 Neu5Gcα2,3Galβ1,4Glc Ceramide

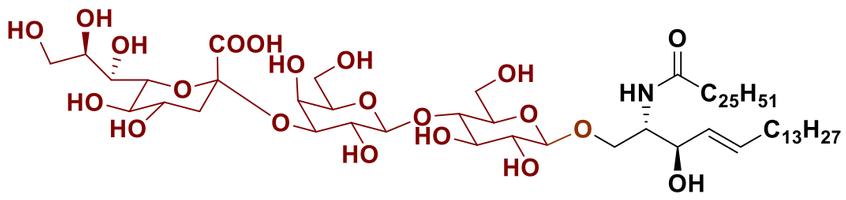
Synonym:



Chemical Formula:	$C_{67}H_{124}N_2O_{21}$
Molecular Weight:	1309.72
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL304 KDNα2,3Galβ1,4Glc Ceramide

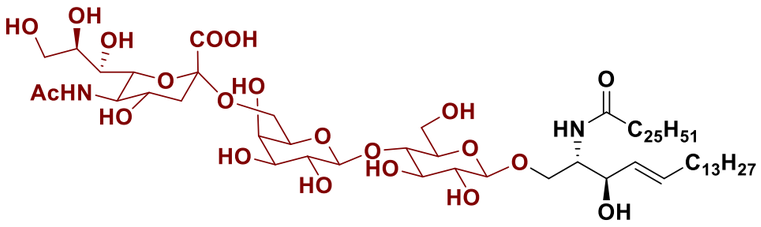
Synonym:



Chemical Formula:	$C_{65}H_{121}NO_{21}$
Molecular Weight:	1252.67
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL305 Neu5Acα2,6Galβ1,4Glc Ceramide

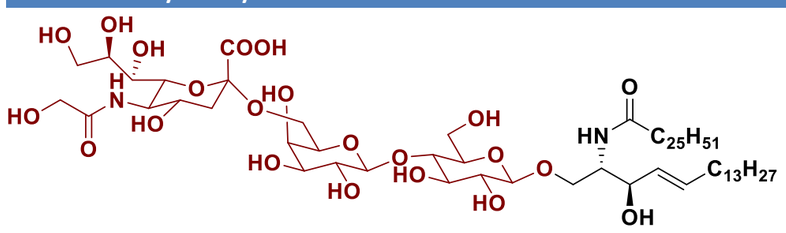
Synonym:



Chemical Formula:	$C_{67}H_{124}N_2O_{21}$
Molecular Weight:	1293.72
CAS No.:	1985644-13-0
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL306 Neu5Gcα2,6Galβ1,4Glc Ceramide

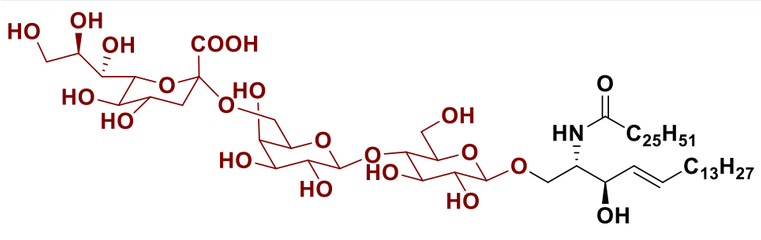
Synonym:



Chemical Formula:	$C_{67}H_{124}N_2O_{21}$
Molecular Weight:	1309.72
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL307 KDNα2,3Galβ1,4Glc Ceramide

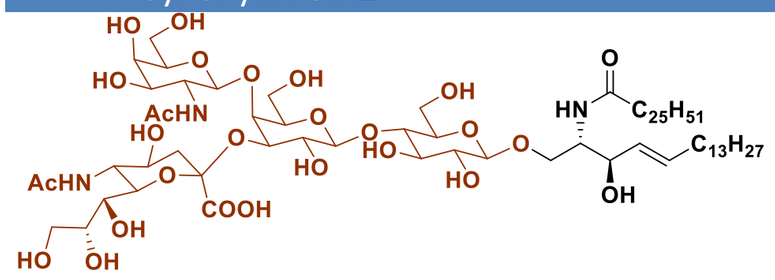
Synonym:



Chemical Formula:	$C_{65}H_{121}NO_{21}$
Molecular Weight:	1252.67
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL308 Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

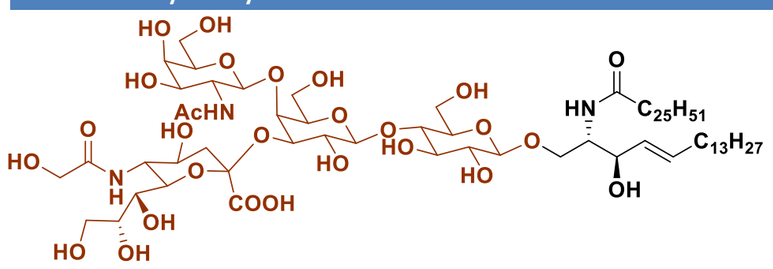
Synonym: GM2



Chemical Formula:	$C_{75}H_{137}N_3O_{26}$
Molecular Weight:	1496.92
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL309 Neu5Gcα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

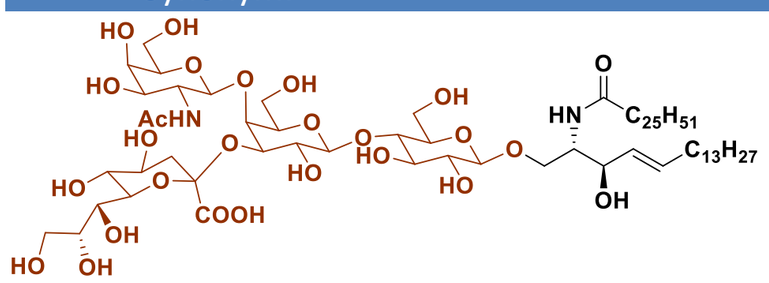
Synonym:



Chemical Formula:	$C_{75}H_{137}N_3O_{27}$
Molecular Weight:	1512.92
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL310 KDNα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

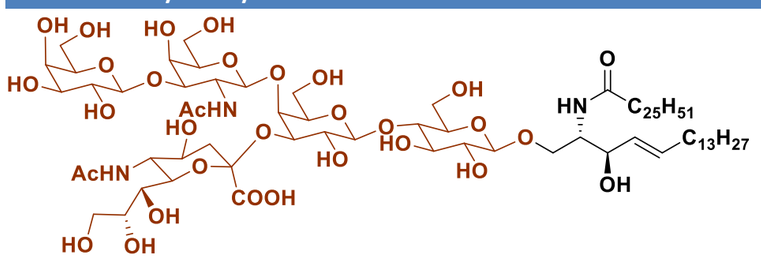
Synonym:



Chemical Formula:	$C_{73}H_{134}N_2O_{26}$
Molecular Weight:	1455.86
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL311 Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

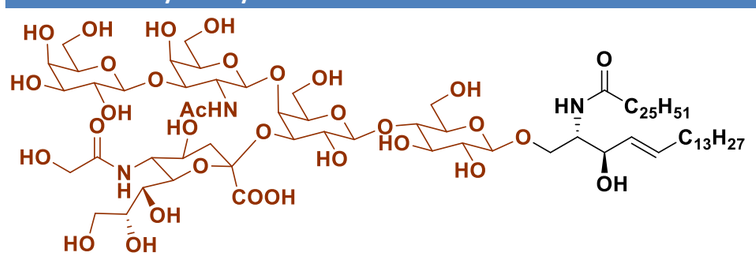
Synonym: GM1



Chemical Formula:	$C_{81}H_{147}N_3O_{31}$
Molecular Weight:	1659.06
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL312 Neu5Gcα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

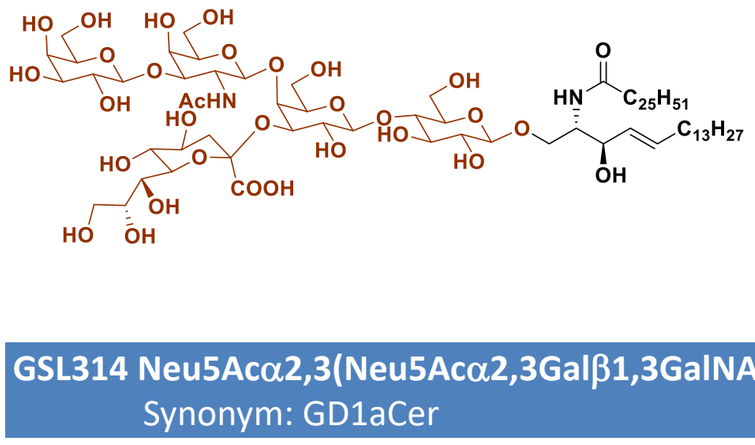
Synonym:



Chemical Formula:	$C_{81}H_{147}N_2O_{32}$
Molecular Weight:	1675.06
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL313 KDNα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

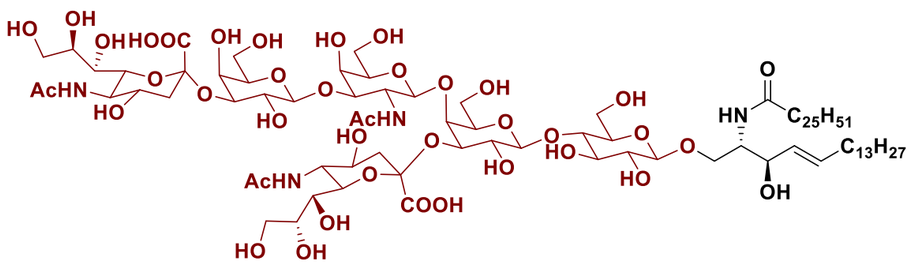
Synonym:



Chemical Formula:	$C_{79}H_{144}N_2O_{31}$
Molecular Weight:	1618.00
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL314 Neu5Acα2,3(Neu5Acα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

Synonym: GD1aCer

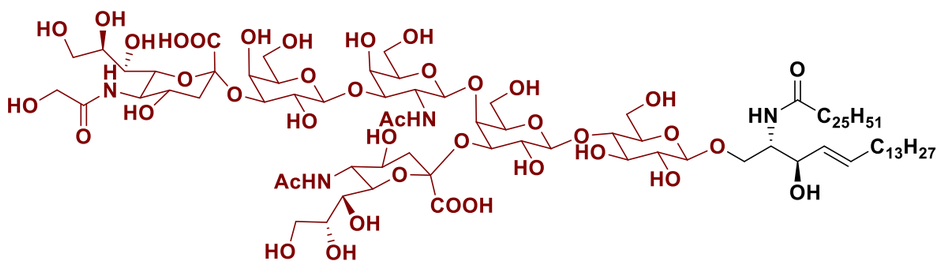


Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1950.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Chemily Glycoscience

GSL315 Neu5Acα2,3(Neu5Gcα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

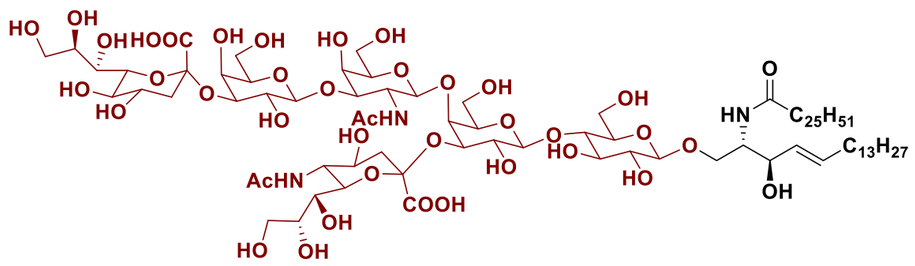
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{40}$
Molecular Weight:	1966.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL316 Neu5Acα2,3(KDNα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

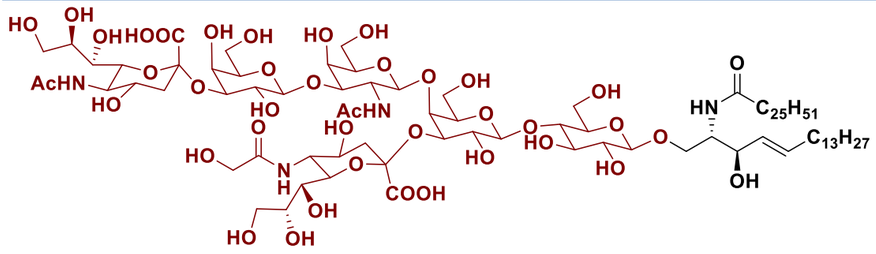
Synonym:



Chemical Formula:	$C_{90}H_{161}N_3O_{39}$
Molecular Weight:	1909.26
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL317 Neu5Gcα2,3(Neu5Acα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

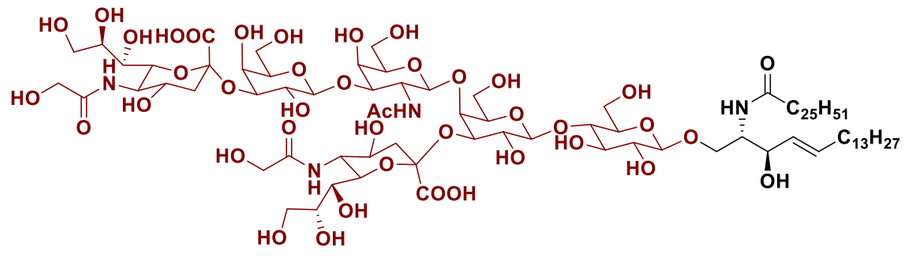
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{40}$
Molecular Weight:	1968.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL318 Neu5Gcα2,3(Neu5Gcα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

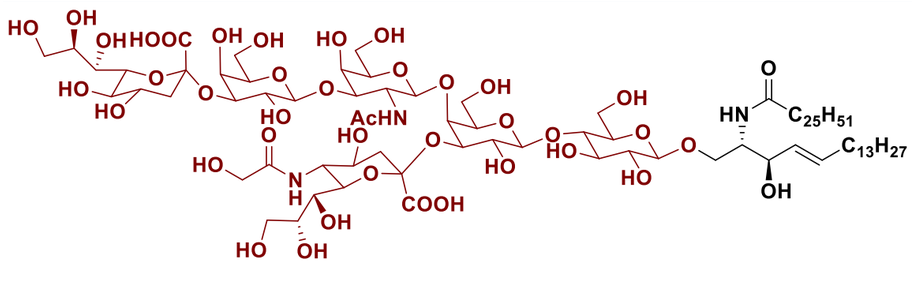
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{41}$
Molecular Weight:	1982.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL319 Neu5Gcα2,3(KDNα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

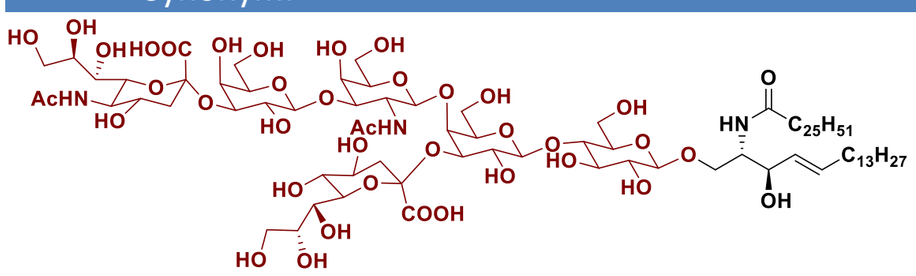
Synonym:



Chemical Formula:	$C_{90}H_{161}N_3O_{40}$
Molecular Weight:	1925.26
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL320 KDNα2,3(Neu5Acα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

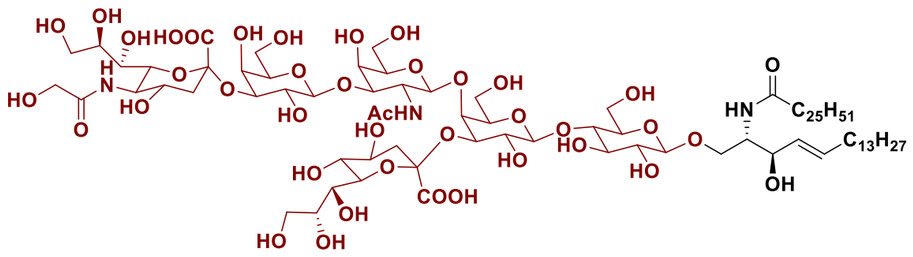
Synonym:



Chemical Formula:	$C_{90}H_{161}N_3O_{39}$
Molecular Weight:	1909.26
CAS No.:	

GSL321 KDNα2,3(Neu5Gcα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

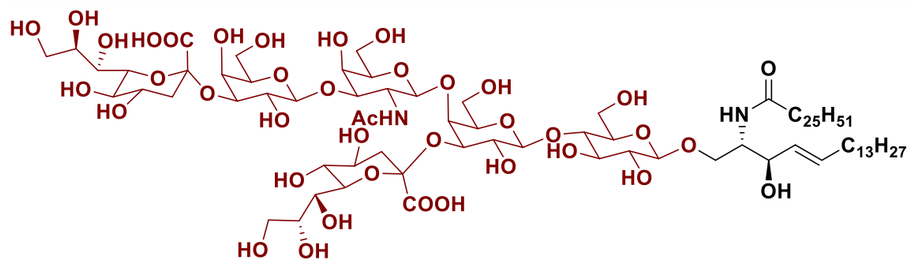
Synonym: GM1 Cer



Chemical Formula:	$C_{90}H_{161}N_3O_{40}$
Molecular Weight:	1925.26
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL322 KDNα2,3(KDNα2,3Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

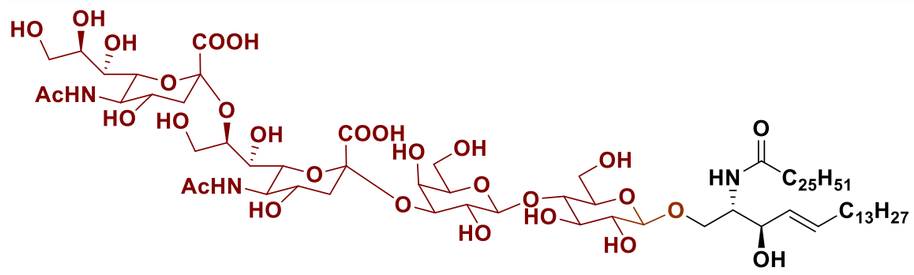
Synonym:



Chemical Formula:	$C_{88}H_{158}N_2O_{39}$
Molecular Weight:	1868.21
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL323 Neu5Acα2,8Neu5Acα2,3Galβ1,4Glc Ceramide

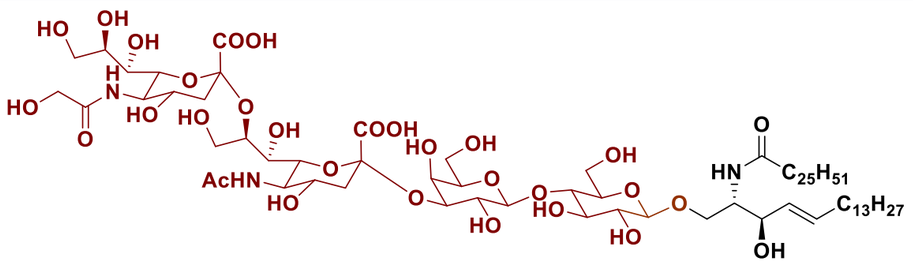
Synonym: GD3Cer



Chemical Formula:	$C_{78}H_{141}N_3O_{29}$
Molecular Weight:	1584.98
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL324 Neu5Gcα2,8Neu5Acα2,3Galβ1,4Glc Ceramide

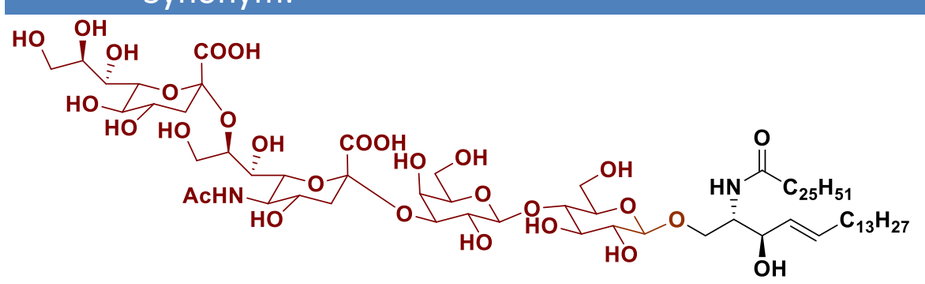
Synonym:



Chemical Formula:	$C_{78}H_{141}N_3O_{30}$
Molecular Weight:	1600.98
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL325 KDNα2,8Neu5Acα2,3Galβ1,4Glc Ceramide

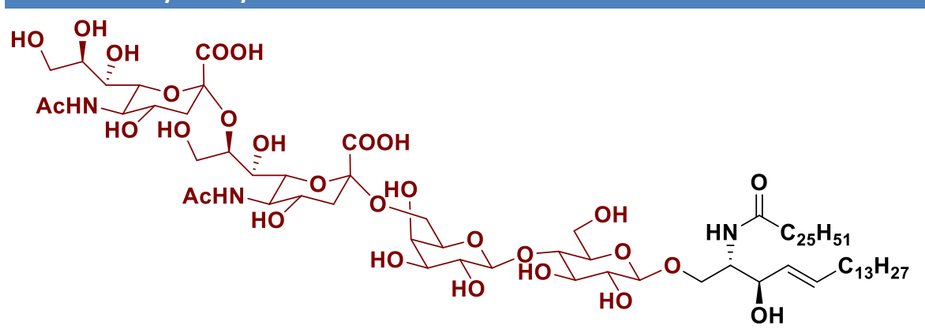
Synonym:



Chemical Formula:	$C_{76}H_{138}N_2O_{29}$
Molecular Weight:	1543.93
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL326 Neu5Acα2,8Neu5Acα2,6Galβ1,4Glc Ceramide

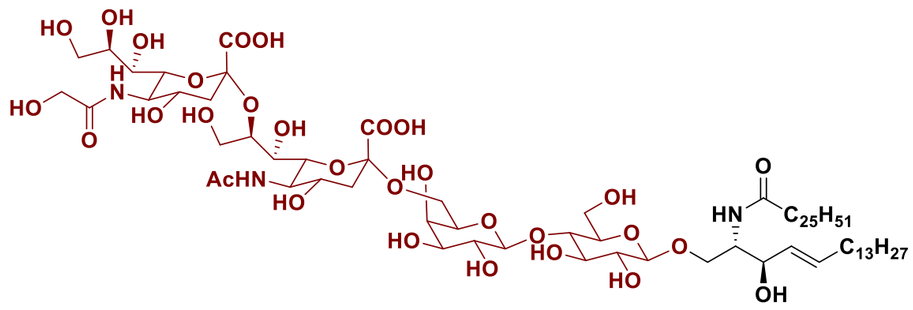
Synonym:



Chemical Formula:	$C_{78}H_{141}N_3O_{29}$
Molecular Weight:	1584.98
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL327 Neu5Gcα2,8Neu5Acα2,6Galβ1,4Glc Ceramide

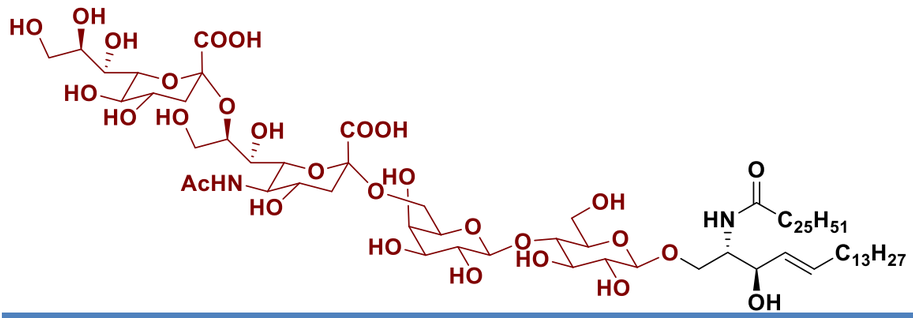
Synonym:



Chemical Formula:	$C_{78}H_{141}N_3O_{30}$
Molecular Weight:	1600.98
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL328 KDNα2,8Neu5Acα2,6Galβ1,4Glc Ceramide

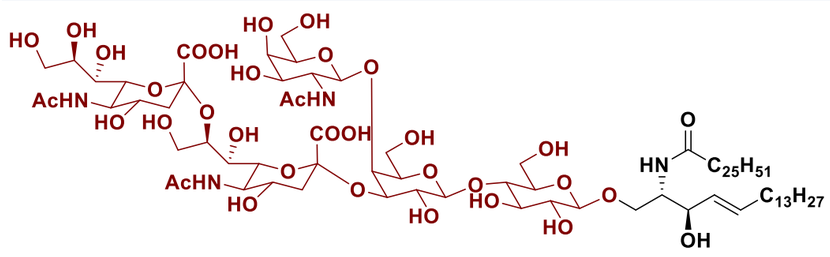
Synonym:



Chemical Formula:	$C_{76}H_{138}N_2O_{29}$
Molecular Weight:	1543.98
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL329 Neu5Acα2,8Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

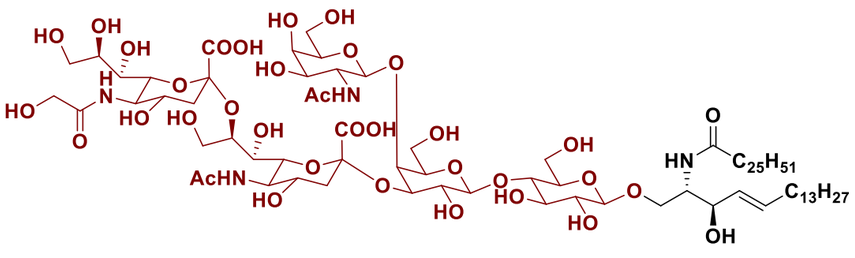
Synonym: GM2 Cer



Chemical Formula:	$C_{86}H_{154}N_4O_{34}$
Molecular Weight:	1788.17
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL330 Neu5Gcα2,8Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

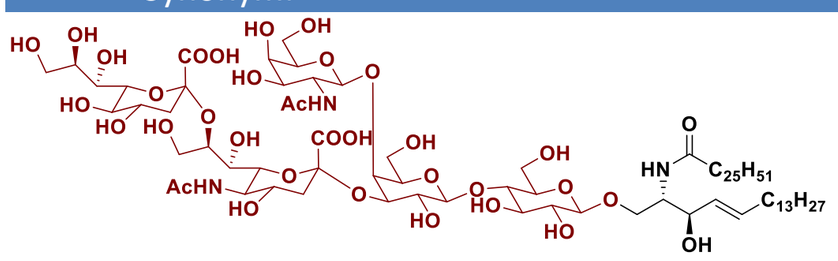
Synonym:



Chemical Formula:	$C_{86}H_{154}N_4O_{35}$
Molecular Weight:	1804.17
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL331 KDNα2,8Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

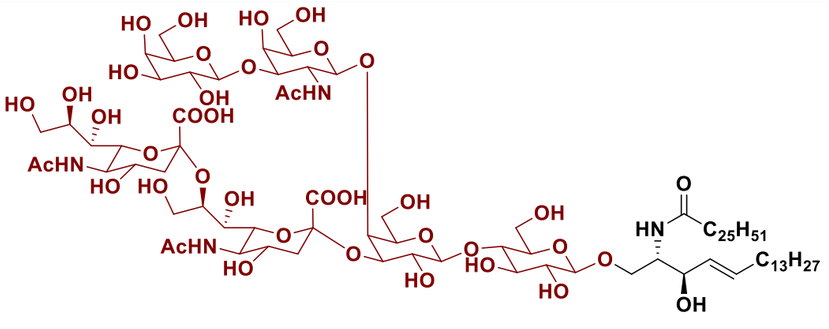
Synonym:



Chemical Formula:	$C_{84}H_{151}N_3O_{34}$
Molecular Weight:	1747.12
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL332 Neu5Acα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

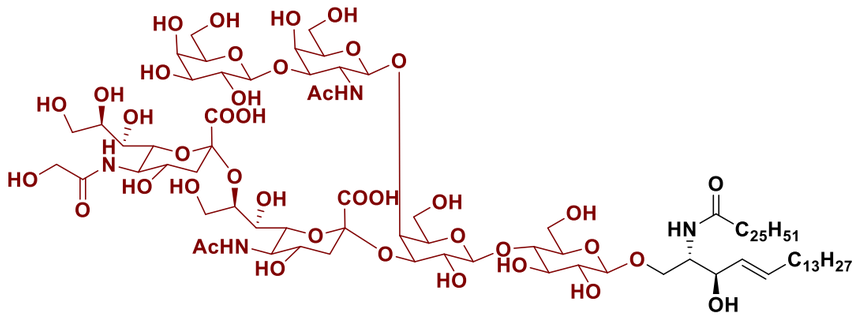
Synonym: GD1bCer



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1950.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL333 Neu5Gcα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

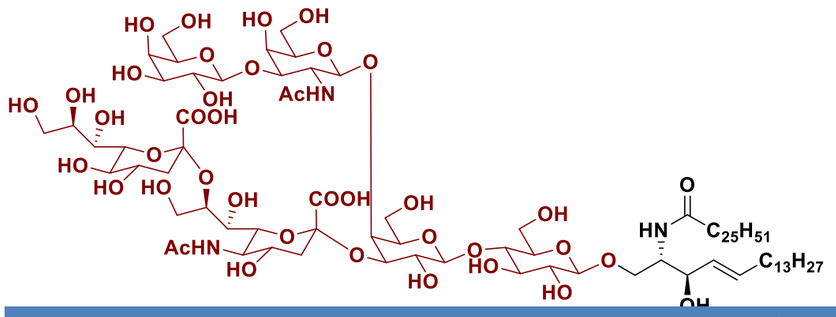
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{40}$
Molecular Weight:	1966.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL334 KDNα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

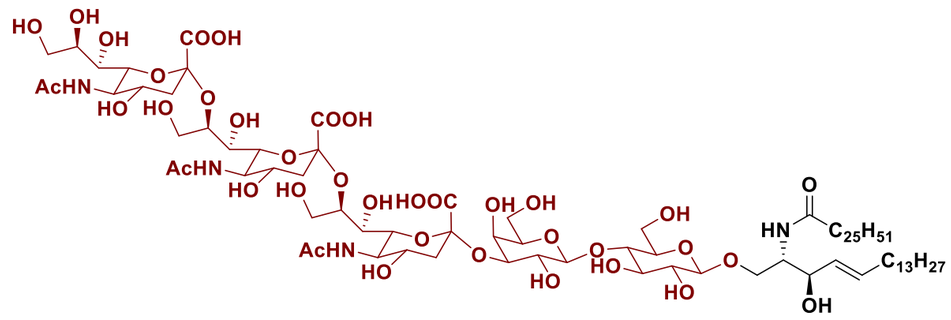
Synonym:



Chemical Formula:	$C_{90}H_{161}N_3O_{39}$
Molecular Weight:	1909.26
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL335 Neu5Acα2,8Neu5Acα2,8Neu5Acα2,3Galβ1,4Glc Ceramide

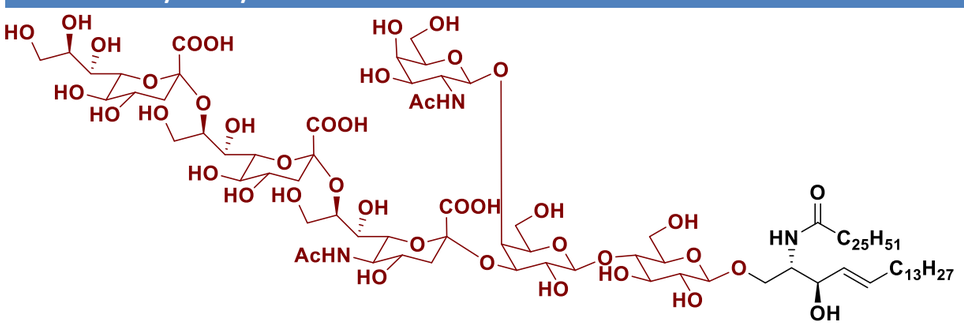
Synonym: GT3Cer



Chemical Formula:	$C_{89}H_{158}N_4O_{39}$
Molecular Weight:	1876.23
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL336 KDNα2,8KDNα2,8Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

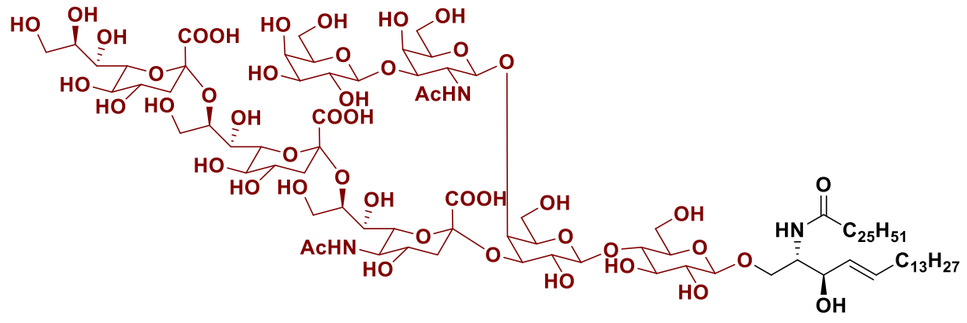
Synonym: GT2Cer



Chemical Formula:	$C_{93}H_{165}N_3O_{42}$
Molecular Weight:	1997.32
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL337 KDNα2,8KDNα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

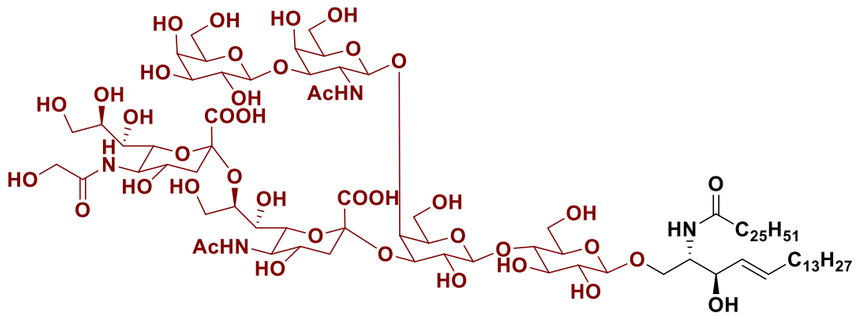
Synonym: GT1cCer



Chemical Formula:	$C_{99}H_{175}N_3O_{47}$
Molecular Weight:	2159.46
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL333 Neu5Gcα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

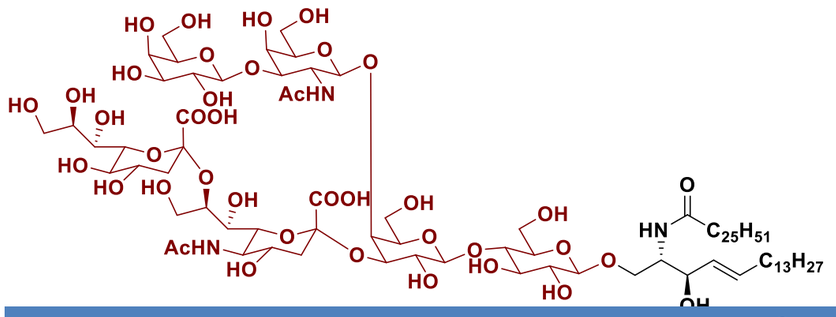
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{40}$
Molecular Weight:	1966.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL334 KDNα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

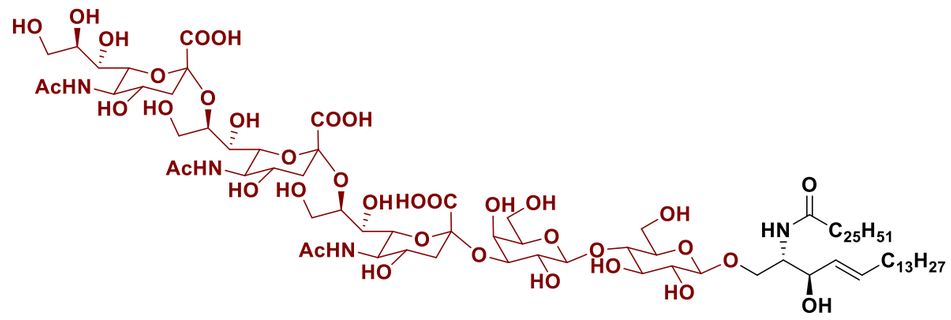
Synonym:



Chemical Formula:	$C_{90}H_{161}N_3O_{39}$
Molecular Weight:	1909.26
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL335 Neu5Acα2,8Neu5Acα2,8Neu5Acα2,3Galβ1,4Glc Ceramide

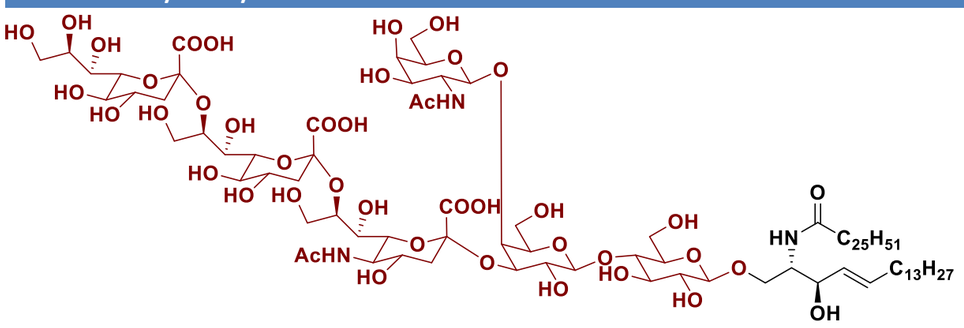
Synonym: GT3Cer



Chemical Formula:	$C_{89}H_{158}N_4O_{39}$
Molecular Weight:	1876.23
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL336 KDNα2,8KDNα2,8Neu5Acα2,3(GalNAcβ1,4)Galβ1,4Glc Ceramide

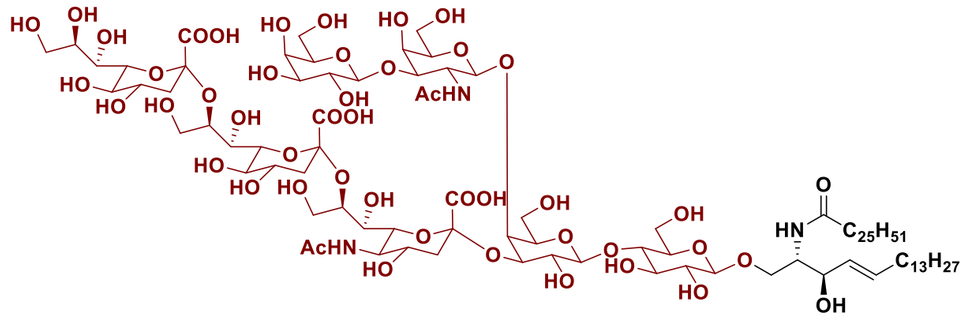
Synonym: GT2Cer



Chemical Formula:	$C_{93}H_{165}N_3O_{42}$
Molecular Weight:	1997.32
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL337 KDNα2,8KDNα2,8Neu5Acα2,3(Galβ1,3GalNAcβ1,4)Galβ1,4Glc Ceramide

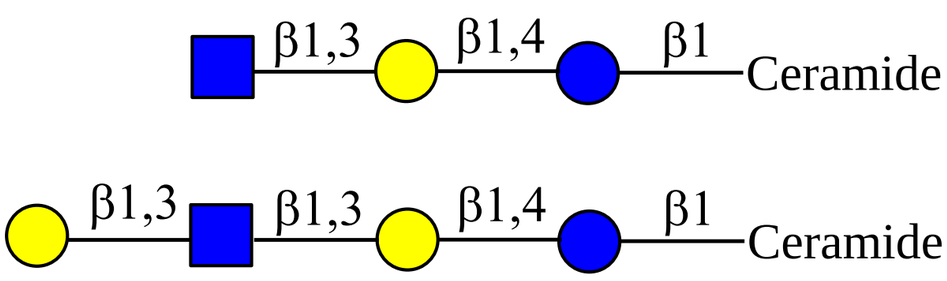
Synonym: GT1cCer



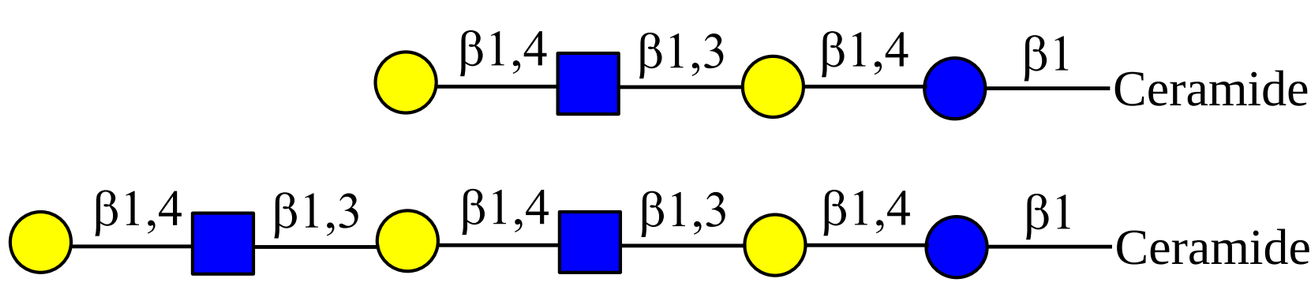
Chemical Formula:	$C_{99}H_{175}N_3O_{47}$
Molecular Weight:	2159.46
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

(Neo)lacto-series GSLs have been found on the surface of human hematopoietic cells and involve in the differentiation of hematopoietic cells. Among the members studied, nLc_4, nLc_6, and nLc_8 containing 1-3 repeating β1-3-linked LacNAc sequences have been found in elevated levels on tumor cells and in sera of cancer patients. The levels of nLc_4, nLc_6, and nLc_8 can be elevated during corneal epithelial cell migration, indicating their roles in corneal epithelial cell migration and wound healing by influencing cell-cell and cell-matrix interactions. nLc_4, nLc_6, and nLc_8 also serve as receptors for some bacteria and bacterial products. nLcs are also common core structures for more complex glycolipids. They can serve as precursors for Lex-GSLs which have been shown to mediate cell-cell interactions.

Lacto-Series

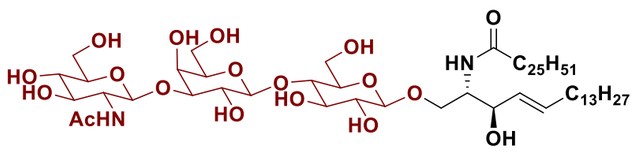


Neolacto-Series



GSL401 Glcβ1,3Galβ1,4Glc Ceramide

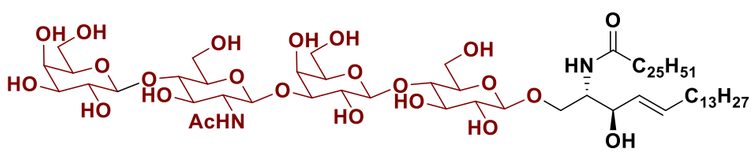
Synonym:



Chemical Formula:	$C_{64}H_{120}N_2O_{18}$
Molecular Weight:	1205.66
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL402 Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

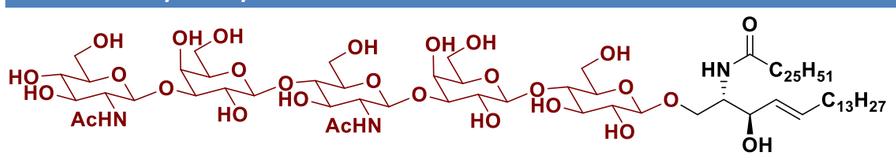
Synonym:



Chemical Formula:	$C_{70}H_{130}N_2O_{23}$
Molecular Weight:	1367.80
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL403 GlcNAcβ1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

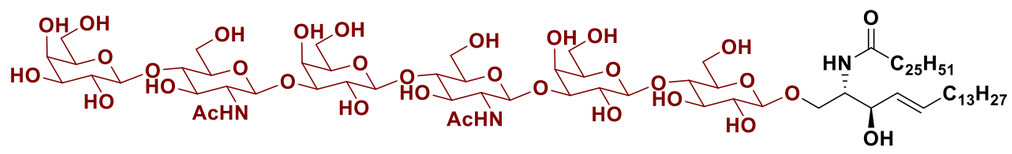
Synonym:



Chemical Formula:	$C_{78}H_{143}N_3O_{28}$
Molecular Weight:	1571.00
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL404 Galβ1,4GlcNAcβ1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

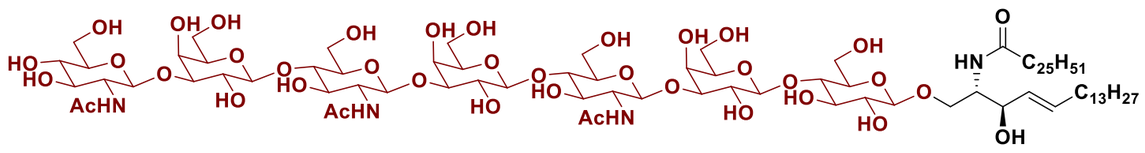
Synonym:



Chemical Formula:	$C_{84}H_{153}N_3O_{33}$
Molecular Weight:	1733.14
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL405 GlcNAcβ1,3Galβ1,4GlcNAcβ1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

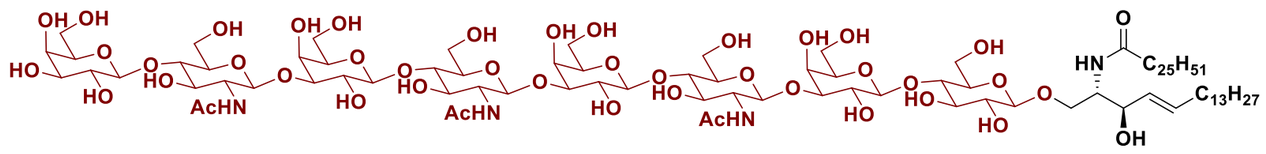
Synonym:



Chemical Formula:	$C_{92}H_{166}N_4O_{38}$
Molecular Weight:	1936.33
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL406 Galβ1.4GlcNAcβ1,3Galβ1,4GlcNAcβ1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

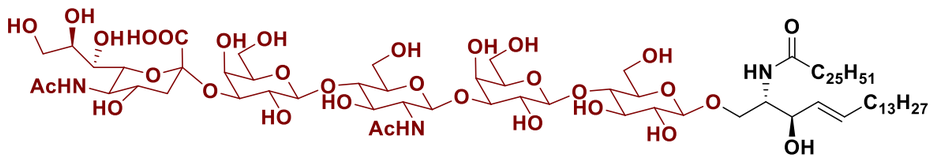
Synonym:



Chemical Formula:	$C_{98}H_{176}N_4O_{43}$
Molecular Weight:	2098.47
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL407 Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

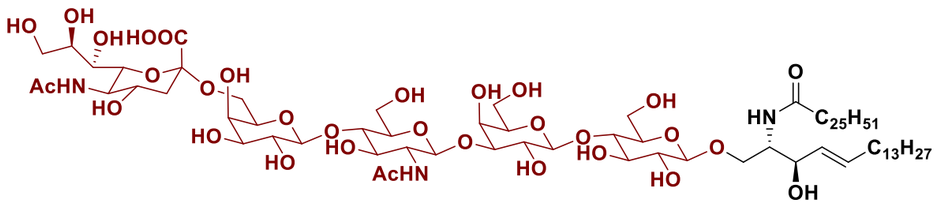
Synonym:



Chemical Formula:	$C_{81}H_{147}N_3O_{31}$
Molecular Weight:	1659.06
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL408 Neu5Acα2,6Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

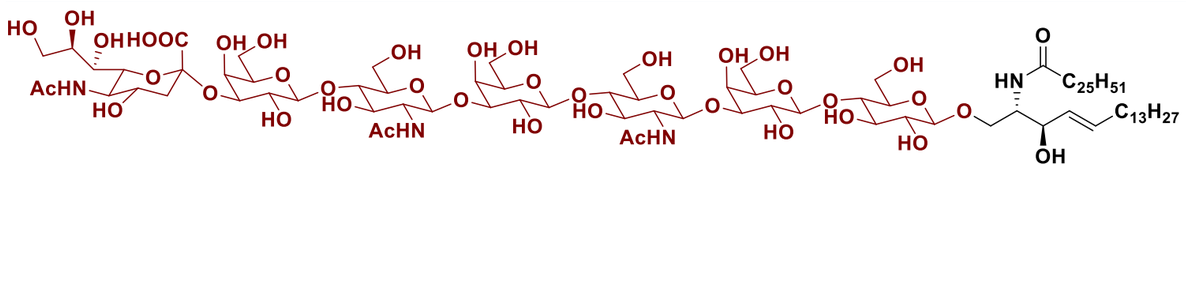
Synonym:



Chemical Formula:	$C_{81}H_{147}N_3O_{31}$
Molecular Weight:	1659.06
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL409 Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

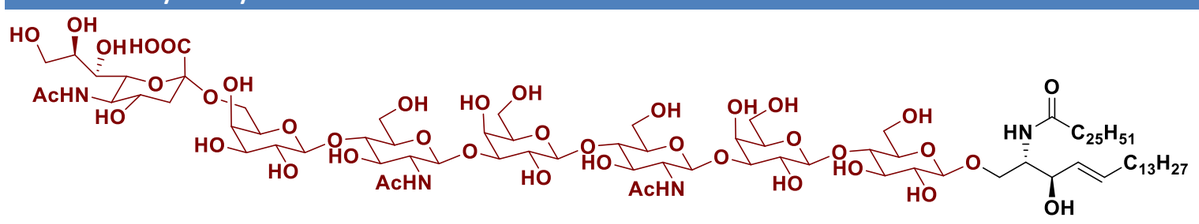
Synonym:



Chemical Formula:	$C_{95}H_{170}N_4O_{41}$
Molecular Weight:	2024.39
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL410 Neu5Acα2,6Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

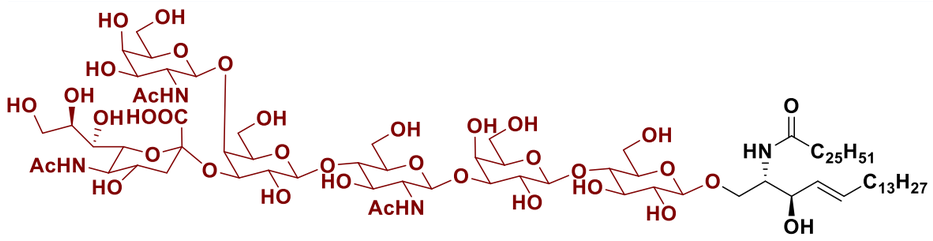
Synonym:



Chemical Formula:	$C_{95}H_{170}N_4O_{41}$
Molecular Weight:	2024.39
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL411 Neu5Acα2,3Gal(β1,4GalNAc)β1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

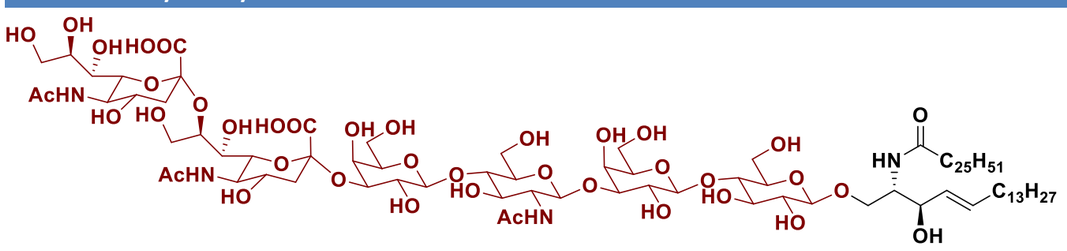
Synonym:



Chemical Formula:	$C_{89}H_{160}N_4O_{36}$
Molecular Weight:	1862.25
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL412 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

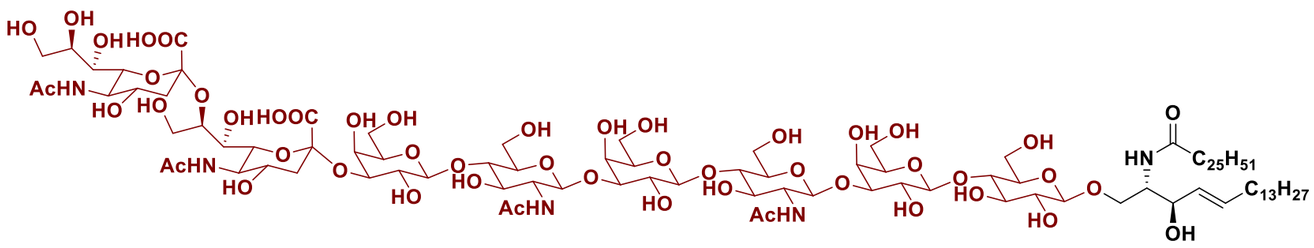
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1950.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL413 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

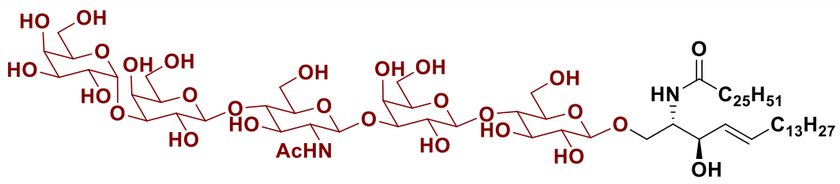
Synonym:



Chemical Formula:	$C_{106}H_{187}N_5O_{49}$
Molecular Weight:	2315.65
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL414 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

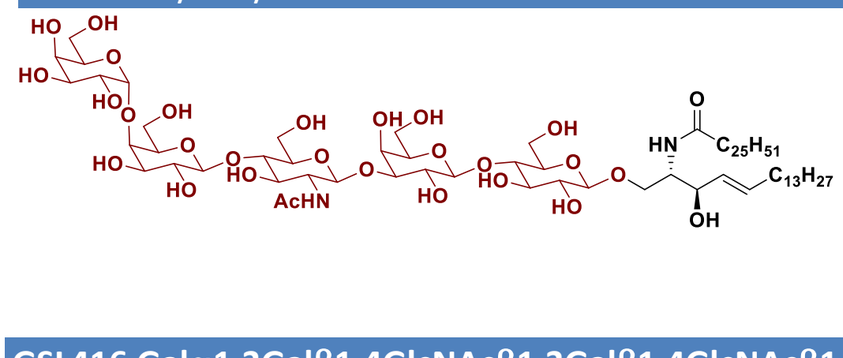
Synonym:



Chemical Formula:	$C_{76}H_{140}N_2O_{28}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL415 Galα1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

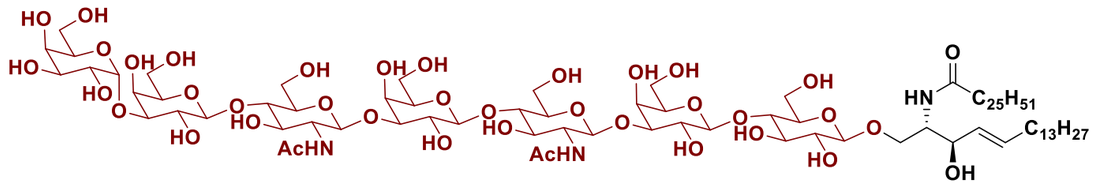
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL416 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

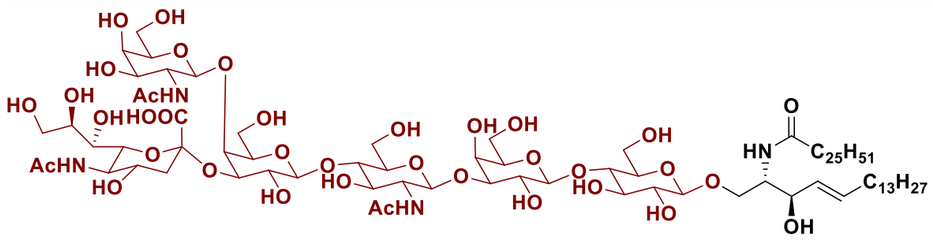
Synonym:



Chemical Formula:	$C_{90}H_{163}N_3O_{38}$
Molecular Weight:	1895.28
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL411 Neu5Acα2,3Gal(β1,4GalNAc)β1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

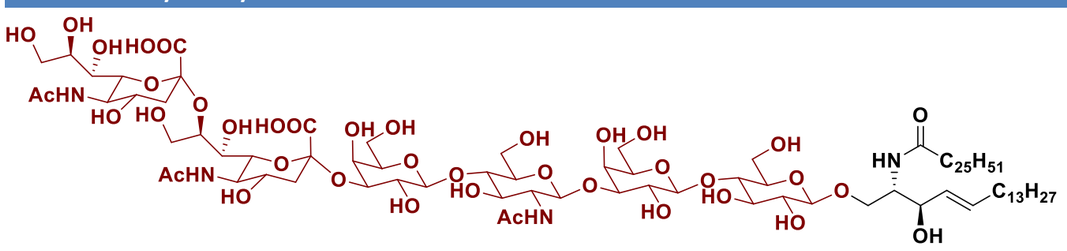
Synonym:



Chemical Formula:	$C_{89}H_{160}N_4O_{36}$
Molecular Weight:	1862.25
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL412 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

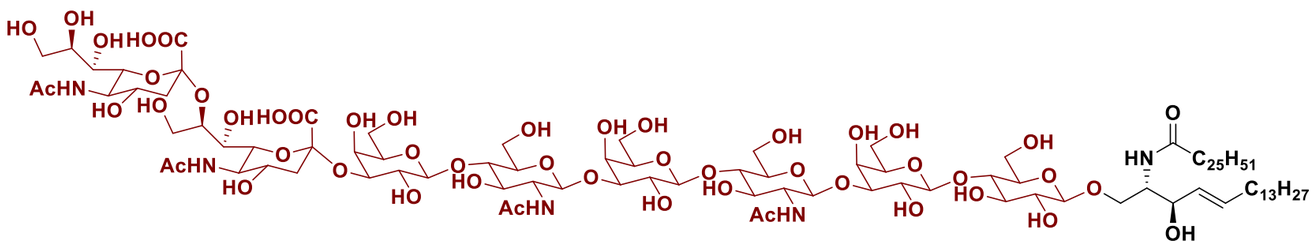
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1950.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL413 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

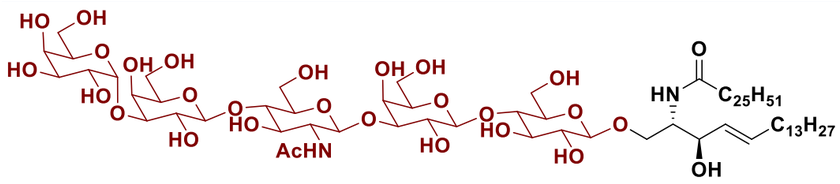
Synonym:



Chemical Formula:	$C_{106}H_{187}N_5O_{49}$
Molecular Weight:	2315.65
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL414 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

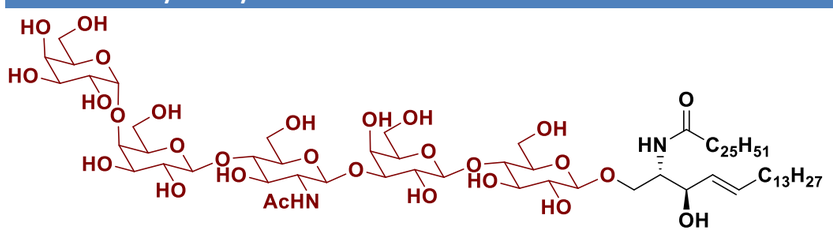
Synonym:



Chemical Formula:	$C_{76}H_{140}N_2O_{28}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL415 Galα1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

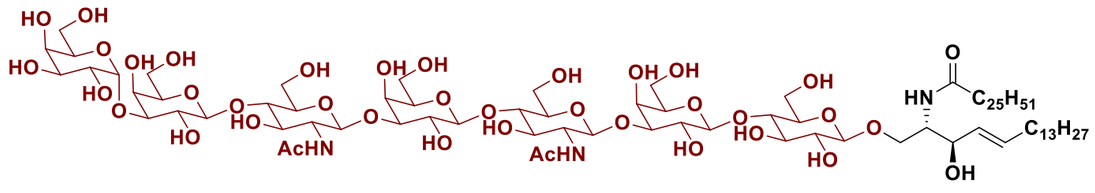
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL416 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

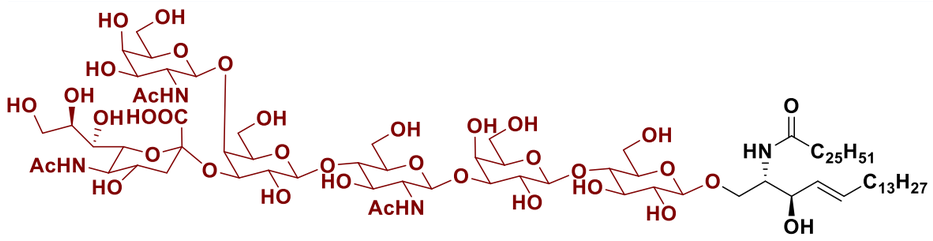
Synonym:



Chemical Formula:	$C_{90}H_{163}N_3O_{38}$
Molecular Weight:	1895.28
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL411 Neu5Acα2,3Gal(β1,4GalNAc)β1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

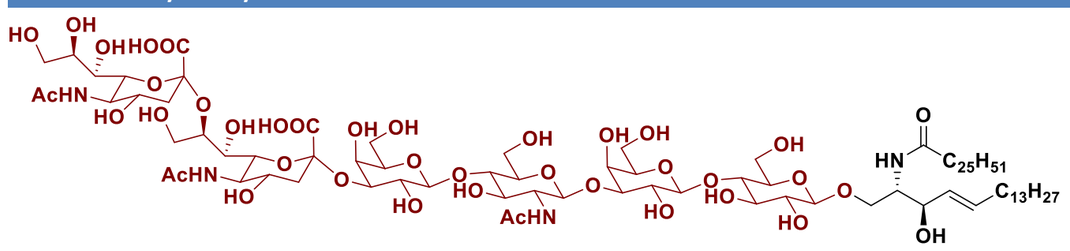
Synonym:



Chemical Formula:	$C_{89}H_{160}N_4O_{36}$
Molecular Weight:	1862.25
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL412 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

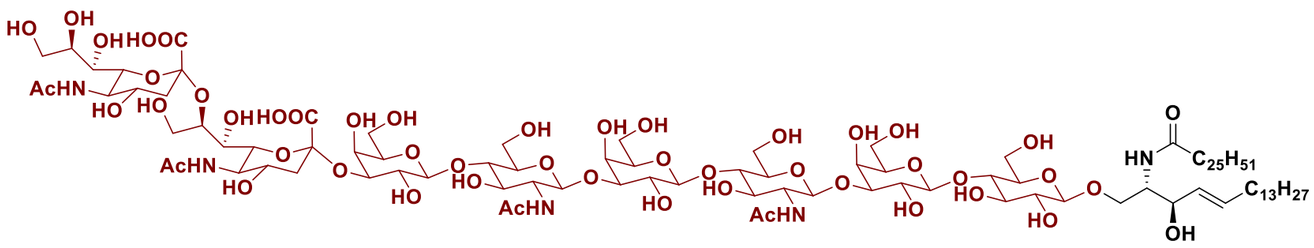
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1950.31
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL413 Neu5Acα2,8Neu5Acα2,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

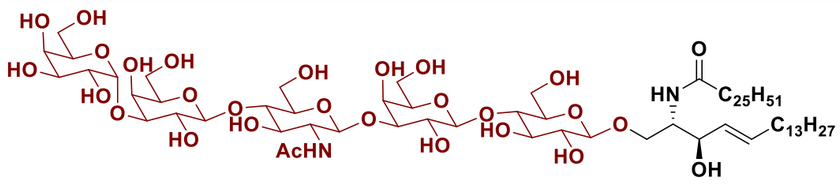
Synonym:



Chemical Formula:	$C_{106}H_{187}N_5O_{49}$
Molecular Weight:	2315.65
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL414 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

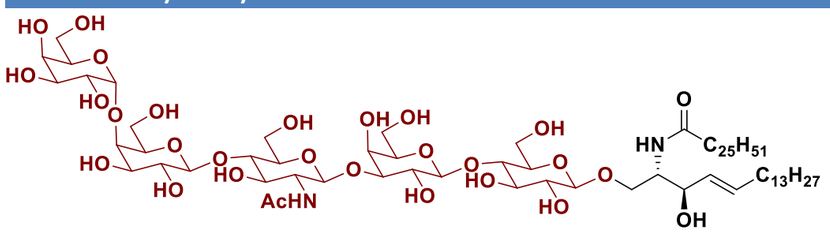
Synonym:



Chemical Formula:	$C_{76}H_{140}N_2O_{28}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL415 Galα1,4Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

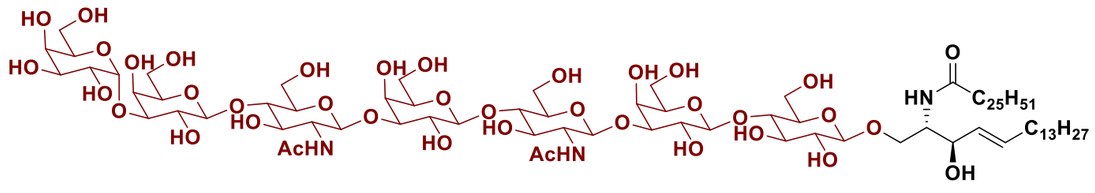
Synonym:



Chemical Formula:	$C_{92}H_{164}N_4O_{39}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL416 Galα1,3Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

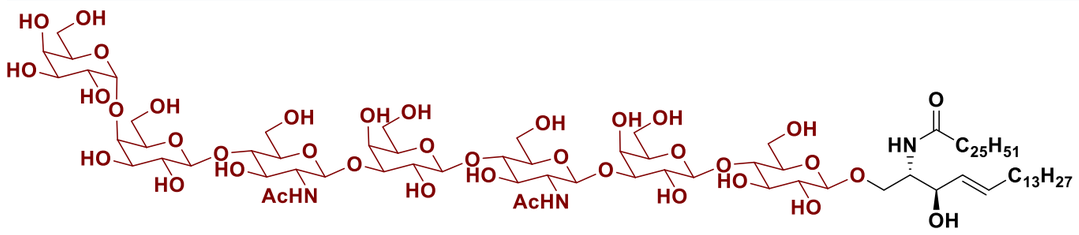
Synonym:



Chemical Formula:	$C_{90}H_{163}N_3O_{38}$
Molecular Weight:	1895.28
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL417 Galα1,4Galβ1,4GlcNAcβ1,3Galβ1,4GlcNAcβ1,3Galβ1,4Glc Ceramide

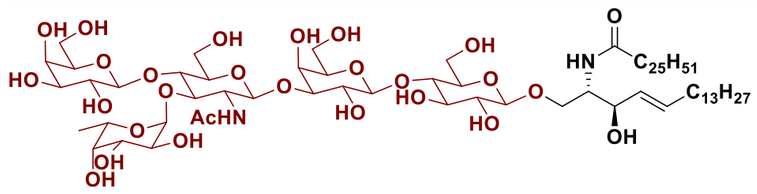
Synonym:



Chemical Formula:	$C_{90}H_{163}N_3O_{38}$
Molecular Weight:	1895.28
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL418 Fucα1,3(Galβ1,4)GlcNAcβ1,3Galβ1,4Glc Ceramide

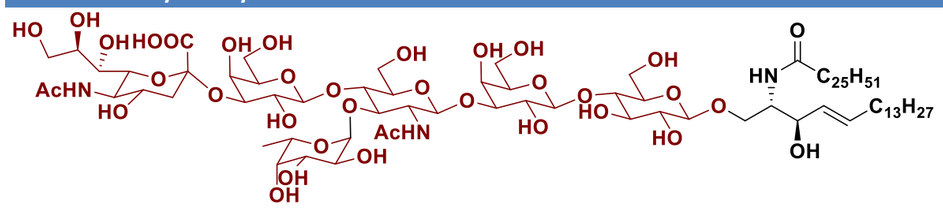
Synonym:



Chemical Formula:	$C_{76}H_{140}N_2O_{27}$
Molecular Weight:	1513.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL419 Fucα1,3(Neu5Acα2,3Galβ1,4)GlcNAcβ1,3Galβ1,4Glc Ceramide

Synonym:

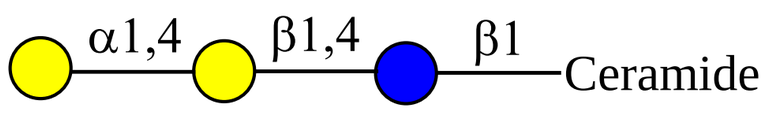


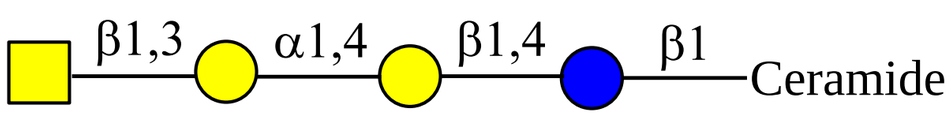
Chemical Formula:	$C_{87}H_{157}N_3O_{35}$
Molecular Weight:	1805.20
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

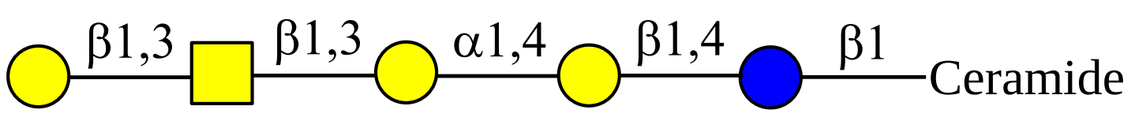
Globo- and isoglobo-series GSLs are membrane-associated antigens. They are recognized by both adhesive proteins such as proteins of pathogenic *E. coli* in human epithelial cells of the urinary tract and toxins including bacterial lectins. Many globo-GSLs have been identified as tumor-specific antigens, exemplified by the observation of elevated globotriaosylceramide levels in Burkitt's lymphoma. Tumor-associated Globo H antigen was initially identified from human breast cancer cell line MCF-7120 and later found in several human cancers. Globo H-based synthetic vaccines have shown promising results in clinical trials for breast and prostate cancers.

GSL452 GlcNAcβ1,3Galβ1,3GalNAcα1,3Galα1,4Glc Cer

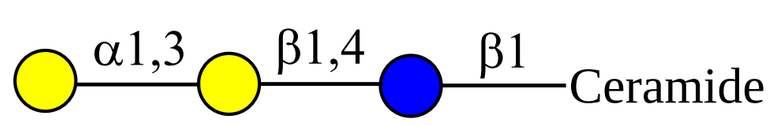
Globo-Series

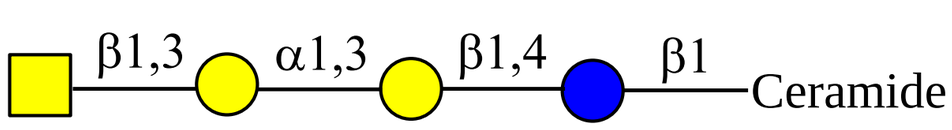


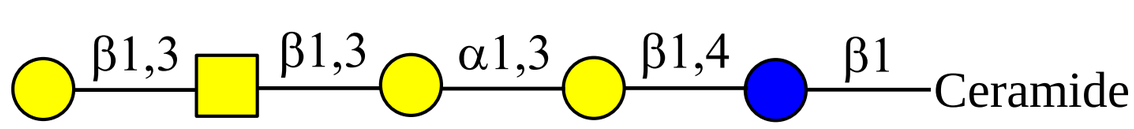




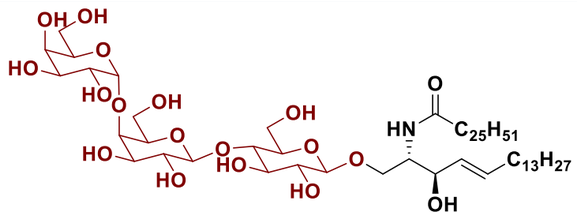
Isoglobo-Series





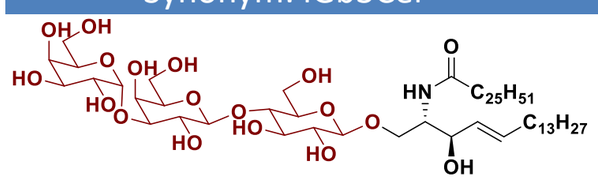


GSL501 Galα1,4Galβ1,4Glc Ceramide
Synonym: Gb3Cer



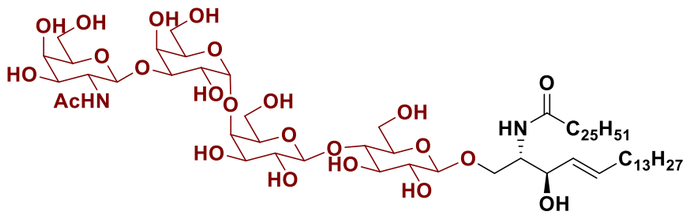
Chemical Formula:	$C_{62}H_{117}NO_{18}$
Molecular Weight:	1164.61
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL502 Galα1,3Galβ1,4Glc Ceramide
Synonym: iGb3Cer



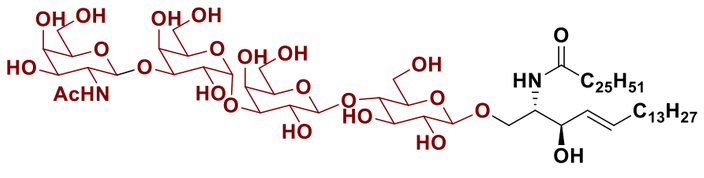
Chemical Formula:	$C_{62}H_{117}NO_{18}$
Molecular Weight:	1164.61
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL503 GalNAcβ1,3Galα1,4Galβ1,4Glc Ceramide
Synonym: Gb4Cer



Chemical Formula:	$C_{70}H_{130}N_2O_{23}$
Molecular Weight:	1367.80
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

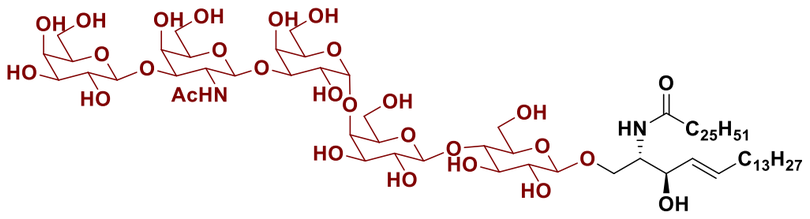
GSL504 GalNAcβ1,3Galα1,3Galβ1,4Glc Ceramide
Synonym: iGb4Cer



Chemical Formula:	$C_{70}H_{130}N_2O_{23}$
Molecular Weight:	1367.80
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL505 Galβ1,3GalNAcβ1,3Galα1,4Galβ1,4Glc Ceramide

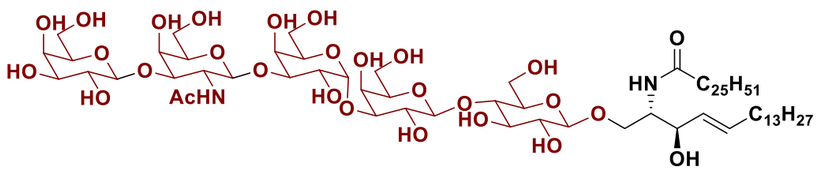
Synonym: Gb5Cer



Chemical Formula:	$C_{76}H_{140}N_2O_{28}$
Molecular Weight:	1529.94
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL506 Galβ1,3GalNAcβ1,3Galα1,3Galβ1,4Glc Ceramide

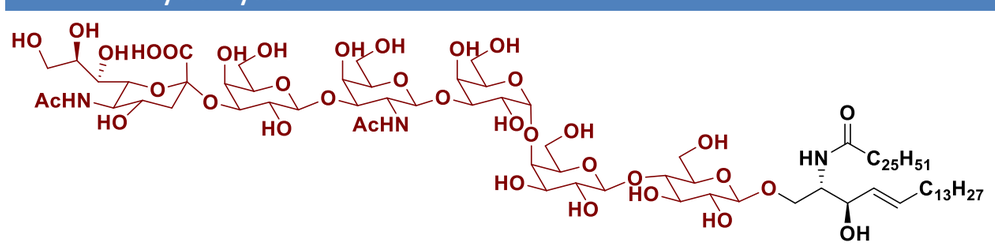
Synonym: iGb5Cer



Chemical Formula:	$C_{70}H_{130}N_2O_{23}$
Molecular Weight:	1367.80
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL507 Neu5Acα2,3Galβ1,3GalNAcβ1,3Galα1,4Galβ1,4Glc Ceramide

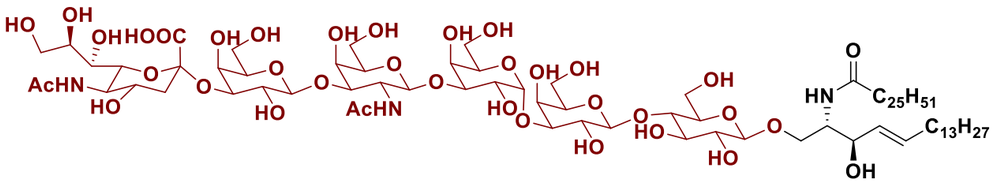
Synonym:



Chemical Formula:	$C_{87}H_{157}N_3O_{36}$
Molecular Weight:	1821.20
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL508 Neu5Acα2,3Galβ1,3GalNAcβ1,3Galα1,3Galβ1,4Glc Ceramide

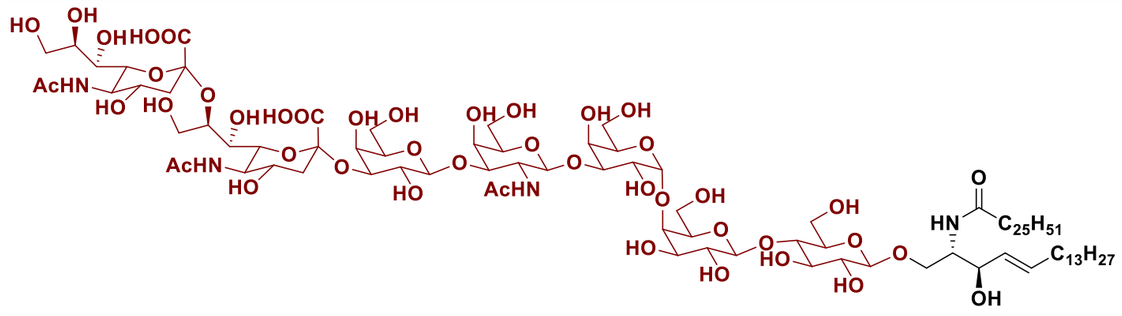
Synonym:



Chemical Formula:	$C_{87}H_{157}N_3O_{36}$
Molecular Weight:	1821.20
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL509 Neu5Acα2,8Neu5Acα2,3Galβ1,3GalNAcβ1,3Galα1,4Galβ1,4Glc Ceramide

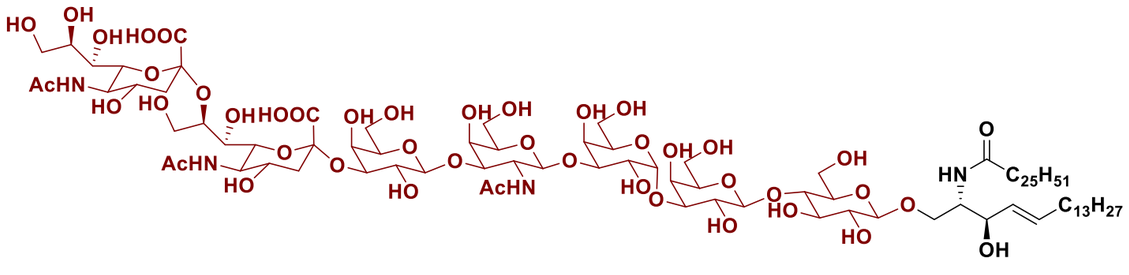
Synonym:



Chemical Formula:	$C_{98}H_{174}N_4O_{44}$
Molecular Weight:	2112.45
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL510 Neu5Acα2,8Neu5Acα2,3Galβ1,3GalNAcβ1,3Galα1,3Galβ1,4Glc Ceramide

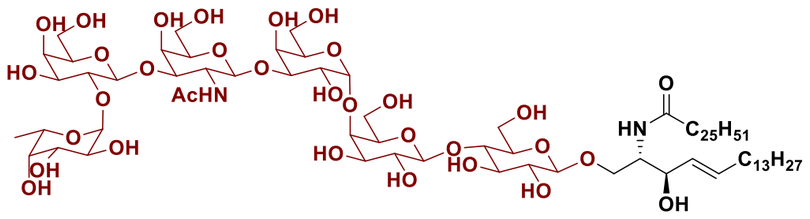
Synonym:



Chemical Formula:	$C_{98}H_{174}N_4O_{44}$
Molecular Weight:	2112.45
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL511 Fucα1,2Galβ1,3GalNAcβ1,3Galα1,4Galβ1,4Glc Ceramide

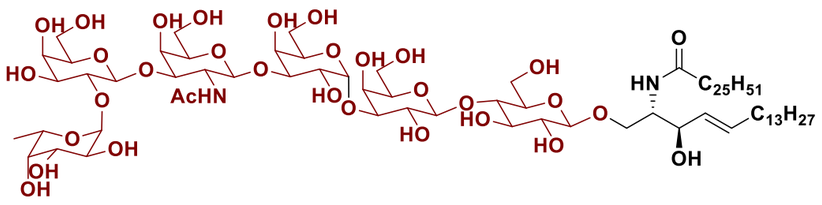
Synonym:



Chemical Formula:	$C_{82}H_{150}N_2O_{32}$
Molecular Weight:	1676.08
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

GSL512 Fucα1,2Galβ1,3GalNAcβ1,3Galα1,3Galβ1,4Glc Ceramide

Synonym:



Chemical Formula:	$C_{82}H_{150}N_2O_{32}$
Molecular Weight:	1676.08
CAS No.:	
Pack size:	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

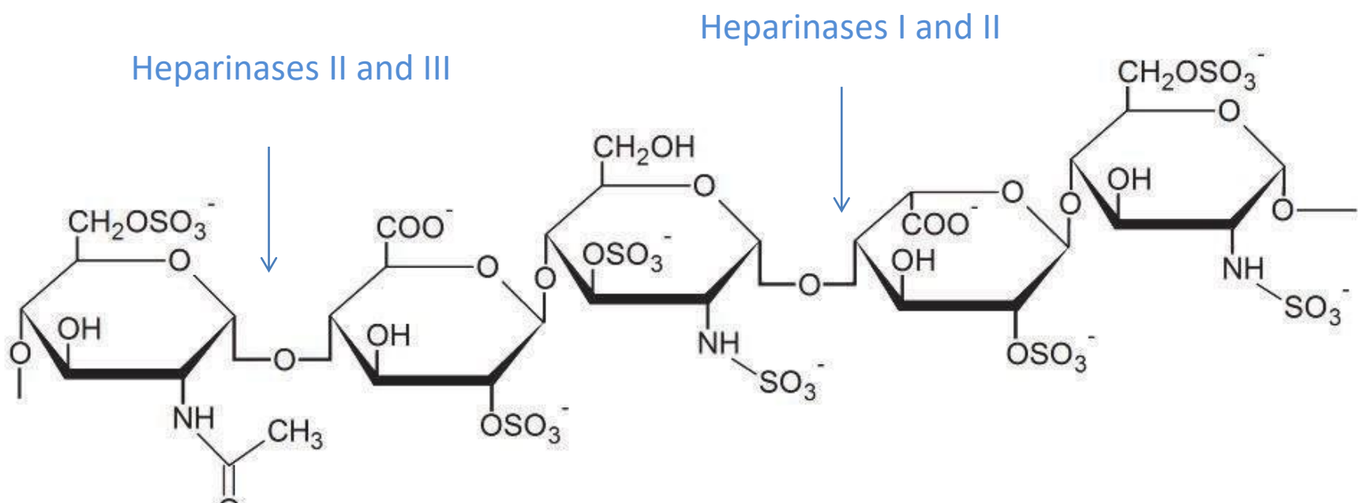
Special Products and Services

Glycan Arrays

Microarray technology has expanded the possibilities of glycoscience discovery by maximizing the scale of analysis while minimizing the scale of the carbohydrate material needed. Glycans are printed to a surface, such as functionalized glass, membrane or gold, in a structured grid or array that enables tracking of the glycan identity. Treatment and analysis of the entire array allows high-throughput comparative analysis for lectin binding studies, viral screening, and other diverse applications. Glycans identified by this approach can then be compared structurally and investigated further.

Heparinase； Heparin lyase

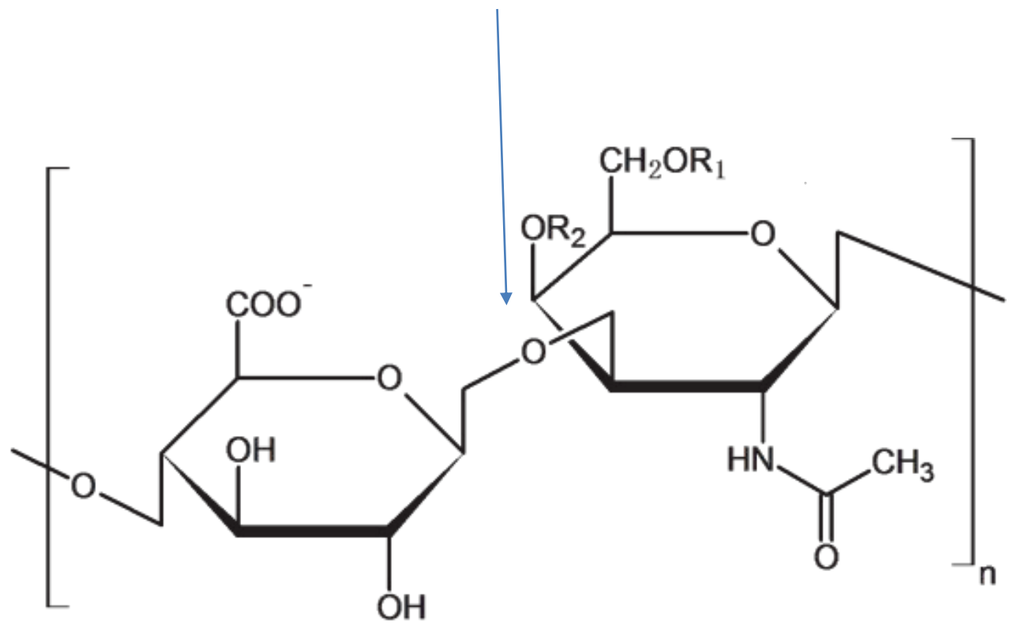
E. coli Recombinant Heparinase from *Flavobacterium heparinum*。



Enzyme/product	Catalog #	EC#	CAS #	Description	Size
Heparinase I	AG00-2519	4.2.2.7	9025-39-2	Heparinase I from *Flavobacterium heparinum;* Substrates: Heparin and Heparan sulfate (ratio approx. 3:1)	1 IU
Heparinase II	AG00-6512		149371-12-0	Heparinase II from *Flavobacterium heparinum;* Substrates: Heparin and Heparan sulfate	1 IU
Heparinase III	AG00-8891	4.2.2.8	37290-86-1	Heparinase II from *Flavobacterium heparinum;* Substrates: Heparan sulfate	1 IU
S-2238	AG00-0101	4.2.2.7	113711-77-6	Chromogenic Substrate for Thrombin	10 mg
S-2765	AG00-0102		115388-96-0	Chromogenic Substrate for Factor Xa	10 mg
S-2222	AG00-0103	4.2.2.8	-	Chromogenic Substrate for Factor Xa	25mg
Activated Factor X (FXa)	AG00-0121			Activated Factor X (FXa), from Bovine Plasma	2.5 IU
Alpha thrombin (Flla)	AG00-0122			Alpha-Thrombin (FIIa), from Bovine Plasma	50 IU
Human Thrombin (Flla)	EZ006K			Human Thrombin(FIIa) from Human Plasma	6X10 NIE(MOQ)
Antithrombin (AT)	AG00-0131			Antithrombin (AT), from Bovine Plasma	10 IU
Human Antithrombin (AT)	AG00-0132			Human Antithrombin(AT) from Human Plasma	10 IU

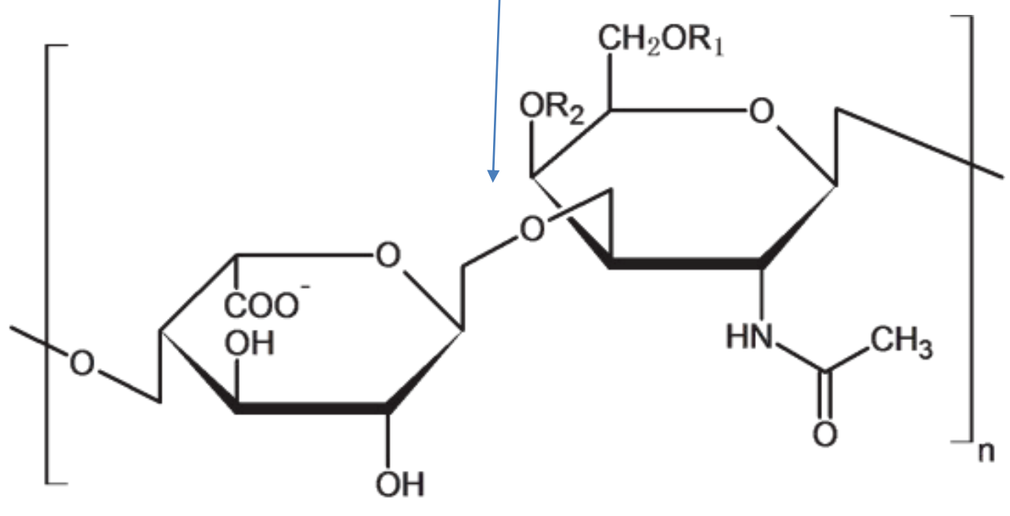
Chondroitinases; Chondroitin Lyase

Chondroitinase AC



Chondroitin sulfate A & C
R1 = H or SO3 -
R2 = H or SO3 -

Chondroitinase B



Dermatan sulfate (Chondroitin sulfate B)
R1 = H
R2 = SO3 -

Enzyme/product	Catalog #	EC#	CAS #	Description	Size
Chondroitinase AC	AG00-2780	4.2.2.5	9047-57-8	Chondroitinase AC, from *Flavobacterium heparinum;* Substrates: Chindroitin sulfate A, chondroitin sulfate C, chondroitin and hyaluronic acid	5 IU
Chondroitinase B	AG00-8058	4.22.19	52227-83-5	Chondroitinase B, from *Flavobacterium heparinum;* Substrate: Dermatan sulfate (chondroitin sulfate B)	5 IU

Heparin Unsaturated Disaccharides

Catalog #	Description	Size
AG00-0401	Heparin Unsaturated Disaccharide ΔI-S, Sodium Salt, 98%	1 mg, 5 mg, 25 mg
AG00-0402	Heparin Unsaturated Disaccharide ΔII-S, Sodium Salt, 98%	0.5 mg, 1 mg, 5 mg
AG00-0403	Heparin Unsaturated Disaccharide ΔIII-S, Sodium Salt, 98%	1 mg, 2 mg, 5 mg
AG00-0404	Heparin Unsaturated Disaccharide ΔIV-S, Sodium Salt, 98%	1 mg, 2 mg
AG00-0405	Heparin Unsaturated Disaccharide ΔI-A, Sodium Salt, 98%	1 mg, 2 mg, 5 mg
AG00-0406	Heparin Unsaturated Disaccharide ΔII-A, Sodium Salt, 98%	1 mg, 5 mg
AG00-0407	Heparin Unsaturated Disaccharide ΔIII-A, Sodium Salt, 98%	1 mg, 5 mg
AG00-0408	Heparin Unsaturated Disaccharide ΔIV-A, Sodium Salt, 98%	0.5 mg, 1 mg
AG00-0409	Heparin Unsaturated Disaccharide ΔI-H, Sodium Salt, 98%	1 mg, 2 mg
AG00-0410	Heparin Unsaturated Disaccharide ΔII-H, Sodium Salt, 98%	1 mg, 2 mg
AG00-0411	Heparin Unsaturated Disaccharide ΔIII-H, Sodium Salt, 98%	1 mg, 2 mg
AG00-0412	Heparin Unsaturated Disaccharide ΔIV-H, Sodium Salt, 98%	1 mg, 2 mg
AG00-0413	Heparin Unsaturated Disaccharide ΔI-P, Sodium Salt, 98%	1 mg, 2 mg

Heparin Analogs

Catalog #	Description	Size
AG00-9905	Heparan Sulfate (HS), Sodium Salt, 95%	25 mg
AG00-9320	Dermatan Sulfate (DS), Sodium Salt, 95%	50 mg
AG00-9620	Oversulfated Chondroitin Sulfate (OSCS), Sodium Salt, 95%	100 mg

Chondroitin Unsaturated Disaccharides

Catalog #	Description	Size
AG00-0421	Chondroitin Unsaturated Disaccharide ΔDi-0S, Sodium Salt, 98%	5 mg, 10 mg
AG00-0422	Chondroitin Unsaturated Disaccharide ΔDi-4S, Sodium Salt, 98%	5 mg, 10 mg
AG00-0423	Chondroitin Unsaturated Disaccharide ΔDi-6S, Sodium Salt, 98%	5 mg, 10 mg
AG00-0424	Chondroitin Unsaturated Disaccharide ΔDi-diSE, Sodium Salt, 98%	1 mg, 5 mg
AG00-0425	Chondroitin Unsaturated Disaccharide ΔDi-diSD, Sodium Salt, 98%	1 mg, 5 mg
AG00-0426	Chondroitin Unsaturated Disaccharide ΔDi-diSB, Sodium Salt, 98%	1 mg, 5 mg
AG00-0427	Chondroitin Unsaturated Disaccharide ΔDi-triS, Sodium Salt, 98%	1 mg, 5 mg
AG00-0428	Chondroitin Unsaturated Disaccharide ΔDi-UA2S, Sodium Salt, 98%	1 mg, 5 mg
AG00-0431	Chondroitin Disaccharide Di-4S, Sodium Salt, 98%	1 mg, 2 mg
AG00-0432	Chondroitin Disaccharide Di-4S, Sodium Salt, 98%	1 mg, 2 mg

Hyaluronic Acid Unsaturated Disaccharides

Catalog #	Description	Size
AG00-0429	Hyaluronic Acid Unsaturated Disaccharide ΔDiHA, Sodium Salt, 98%	2 mg, 5 mg

Index

Index

Glycoenzymes	
EN01001	α2,6-sialyltransferase (Pd26ST)
EN01002	α2,3-sialyltransferase (PmST1)
EN01003	α2,3/8-sialyltransferase (CstII)
EN01004	α1,3-galactosaminyltransferase (BgtA)
EN01005	β1,4-galactosyltransferase (LgtB)
EN01006	α1,4-galactosyltransferase (LgtC)
EN01007	α1,3-galactosyltransferase (α1,3GalT)
EN01008	Sialic acid aldolase (NPL)
EN01009	CMP-sialic acid synthetase (NmCSS)
EN01010	L-fucokinase/GDP-fucose pyrophosphorylase (FKP)
EN01011	*N* -acetylhexoamine kinase (NahK)
EN01013	Galactokinase (BiGalK)
EN01014	UDP-GlcNAc 4-epimerase (WbgU)
EN01015	UDP-Glc 4-epimerase (GalE)
EN01016	Glycopeptidase (PNGaseF)
EN01017	Endo-β *N* -acetylglucoaminidase A (Endo-A)
EN01018	Inorganic pyrophosphatase (PmPPA)
EN01019	UDP-Sugar pyrophorylase (BlUSP)
EN01020	α1,3-fucosyltransferase (α1,3FucT)
EN01021	UDP-Glc dehydrogenase (UDPDH)
EN01022	*N* -acetylglucoasmine-1-P uridyltransferase (AGX1)
EN01023	α1,2-fucosyltransferase (α1,2FucT)
EN01024	α1,3/4-fucosyltransferase (α1,3/4FucT)
EN01025	Hyaluronan synthase (PmHAS)
EN01026	Chondroitin synthase (PmCS)
EN01027	Heparosan synthase 2 (PmHS2)
EN01028	L-fuculose aldolase (FucA)
EN01029	β1,3-galactosyltransferase (CgtB)
EN01030	β1,3-*N* -acetylhexaminyltransferase (LgtA)
EN01031	β1,3-*N* -acetylgalactosaminyltransferase (LgtD)
EN01032	α1,3-*N* -acetylgalactosaminyltransferase (Pm1138)
EN01033	Fructose 1,6-biphosphate aldolase (SMALDO)
EN01035	GDP-mannose pyrophosphorylase (ManC)
EN01037	D-mannose isomerase
EN01038	L-rhamnose isomerase (RhaA)
EN01039	L-rhamnulose kinase (RhaB)
EN01040	L-fucose isomerase (FucI)
EN01041	L-fucose kinase (FucK)
EN01042	D-xylose isomerase (XylA)
EN01043	L-arabinose isomerase (AraA)
EN01044	D-ribulose kinase (AraB)
EN01045	L-xyulose kinase (LyxK)
EN01046	Fructose kinase (FruK)
EN01049	β1,4-*N* -acetylgalactosaminyltransferase (CgtA)

Sugar Nucleotides	
SN02001	CMP-Neu5Ac.2Na
SN02002	GDP-L-Fuc.2Na
SN02003	GDP-D-Man.2Na
SN02004	UDP-Xyl.2Na
SN02005	UDP-Glc.2Na
SN02006	UDP-Gal.2Na
SN02007	UDP-GlcA.3Na
SN02008	UDP-GalA.3Na
SN02009	UDP-GlcNAc.2Na
SN02010	UDP-GalNAc.2Na
SN02011	UDP-GlcNAz.2Na
SN02012	UDP-GalNAz.2Na
SN02013	UDP-6-azido-6-deoxy-D-Glc.2Na
SN02014	UDP-6-azido-6-deoxy-D-Gal.2Na
SN02015	UDP-4-azido-4-deoxy-D-Glc
SN02016	UDP-ManNAcA
SN02017	UDP-L-Fuc.2NH_3
SN02018	UDP-L-Gal.2NH_3
SN02019	UDP-a-L-Rha
SN02020	UDP-β-L-Ara
SN02021	UDP-GlcA
SN02022	UDP-GalA
SN02023	UDP-Glc
SN02024	UDP-Gal
SN02025	CMP-Neu5Gc.2Na
SN02026	GDP-6-deoxy-a-D-talose
SN02027	GDP-L-Fuc.2NH_3
SN02028	GDP-Glc
SN02029	GDP-Gal
SN02030	GDP-D-Man.2NH_3
SN02031	UDP-GlcA.xNH_3
SN02032	UDP-GlcUA
SN02033	UDP-D-glucose disodium salt – Approx 30% content by UV
SN02034	UDP-a-D-galactose ammonium salt
SN02035	UDP-a-D-galactose disodium salt
SN02036	UDP-3-O-(R-3-hydroxymyristoyl)-N-acetyl-D-glucosamine
SN02037	UDP-2-ketopropyl-a-D-galactose
SN02038	CMP-Pse
SN02039	GDP-D-galactose
SN02040	GDP-L-galactose
SN02041	TDP-Fuc
SN02042	TDP-Glc
SN02043	dTDP-a-Glc.2Na
SN02044	D-TDP-b-L-Rha
SN02045	ADPR-pNP
SN02046	ADPRP
SN02047	ADP-4-deoxy-D-glucose
SN02048	ADP-D-glucose disodium salt
SN02049	ADP-D-glycerol-b-D-manno-heptose
SN02050	ADP-L-glycerol-b-D-manno-heptose

Please feel free to contact us at sales@chemilyus.com for more details.

Oligosaccharides	
OS03001	Galacto-N-biose; Gal-β1,3-GalNAc
OS03002	Lacto-N-Biose; Gal-β1,3-GlcNAc
OS03003	Blood group H disaccharide
OS03004	Isoglobotriose; α-Gal
OS03005	Globotrinose
OS03006	Blood group Type II H-antigen
OS03007	Blood group Type III/IV H-antigen
OS03008	Blood group TYPE V H-antigen
OS03009	3'-Sialyllactose
OS03010	6'-Sialyllactose
OS03012	Globo-N-pentaose; Gb5
OS03013	Globo-H
OS03014	Blood Group Type V A-antigen
OS03015	Blood Group Type V B-antigen
Glycoamino Acids	
GA20100	GlcNAc-Ser
GA10105	GlcNAc-Thr
GA20205	GalNAc-Thr
GA20200	GalNAc-Ser
GA10305	Man-Thr
GA20300	Man-Ser
GA10405	Fuc-Thr
GA30110	GlcNAc-Asn
Glyco-Related Chemicals	
GC03001	Adenosine 5′-triphosphate disodium salt hydrate (ATP)
GC03002	Uridine 5′-triphosphate trisodium salt dihydrate (UTP)
GC03003	Guanosine 5′-triphosphate sodium salt hydrate (GTP)
GC03004	Cytidine 5′-triphosphate disodium salt (CTP)
GC03005	L-fucose
GC03006	D-mannose
GC03007	D-galactosamine HCl
GC03008	L-fuculose
GC03009	L-psicose
GC03010	L-ribulose
GC03011	L-rhamnulose
GC03012	L-tagatose
GC03013	L-xylulose
GC03014	L-fructose
GC03015	D-psicose
GC03016	D-ribulose
GC03017	D-sorbose
GC03018	D-tagatose
GC03019	D-xylulose
GC03020	D-arabinitol
GC03021	3-deoxy-D-glucosone
GC03022	2-deoxy-D-xylose
GC03023	D-rhamnose
GC03024	6-iodo-6-deoxy-D-glucose
GC03025	6-fluoro-6-deoxy-D-galatose
GC03026	3-fluoro-3-deoxy-D-glucitol
GC03027	5-azido-5-deoxy-D-arabinose
GC03028	6-azido-6-deoxy-D-glucose
GC03029	6-azido-6-deoxy-L-galatose
GC03030	6-azido-6-deoxy-D-fructose
GC03031	3-acetylamino-3-deoxy-D-glucose
N-Glycans	
Mucopolysaccharides	
Human Milk Oligosaccharides	
Glycolipid Glycans	
Tandem Epitopes	
F-series	

Special Products	
AG00-2519	Heparinase I
AG00-6512	Heparinase II
AG00-8891	Heparinase III
AG00-0101	S-2238
AG00-0102	S-2765
AG00-0103	S-2222
AG00-0121	Activated factor X (Fxa)
AG00-0122	Alpha thrombin (Flla)
EZ006K	Human thrombin (Flla)
AG00-0131	Antithrombin (AT)
AG00-0132	Human antithrombin (AT)
AG00-2780	Chondroitinase AC
AG00-8058	Chondroitinase B
AG00-0401	Heparin Unsaturated Disaccharide ΔI-S
AG00-0402	Heparin Unsaturated Disaccharide ΔII-S
AG00-0403	Heparin Unsaturated Disaccharide ΔIII-S
AG00-0404	Heparin Unsaturated Disaccharide ΔIV-S
AG00-0405	Heparin Unsaturated Disaccharide ΔI-A
AG00-0406	Heparin Unsaturated Disaccharide ΔII-A
AG00-0407	Heparin Unsaturated Disaccharide ΔIII-A
AG00-0408	Heparin Unsaturated Disaccharide ΔIV-A
AG00-0409	Heparin Unsaturated Disaccharide ΔI-H
AG00-0410	Heparin Unsaturated Disaccharide ΔII-H
AG00-0411	Heparin Unsaturated Disaccharide ΔIII-H
AG00-0412	Heparin Unsaturated Disaccharide ΔIV-H
AG00-0413	Heparin Unsaturated Disaccharide ΔI-P
AG00-9905	Heparan Sulfate (HS)
AG00-9320	Dermatan Sulfate (DS
AG00-9620	Oversulfated Chondroitin Sulfate (OSCS)
AG00-0421	Chondroitin Unsaturated Disaccharide ΔDi-0S
AG00-0422	Chondroitin Unsaturated Disaccharide ΔDi-4S
AG00-0423	Chondroitin Unsaturated Disaccharide ΔDi-6S
AG00-0424	Chondroitin Unsaturated Disaccharide ΔDi-diSE
AG00-0425	Chondroitin Unsaturated Disaccharide ΔDi-diSD
AG00-0426	Chondroitin Unsaturated Disaccharide ΔDi-diSB
AG00-0427	Chondroitin Unsaturated Disaccharide ΔDi-triS
AG00-0428	Chondroitin Unsaturated Disaccharide ΔDi-UA2S
AG00-0430	Chondroitin Disaccharide Di-4S
AG00-0431	Chondroitin Disaccharide Di-4S
AG00-0432	Chondroitin Disaccharide Di-4S
AG00-0429	Hyaluronic Acid Unsaturated Disaccharide ΔDiHA
Services	
	Protein identification (Protein ID)
	Global proteomic profiling
	Global profiling of N-linked glycosylation sites
	Global glycomic profiling
	Glycoprotein analysis

Please feel free to contact us at sales@chemilyus.com for more details.

Sales Terms and Conditions

Chemily Glycoscience

Sales Terms & Conditions

These conditions apply to all sales of goods and services by Chemily, LLC (The Seller) to any Purchaser (The Buyer) of any nationality. In placing its order with The Seller, The Buyer has accepted all of the general terms & conditions of sale as described herein, notwithstanding any proposed change in terms contained in its own purchasing documents agreed upon by The Seller.

Ordering. We will only accept orders from companies, universities and colleges, research institutes, hospitals, and/or government agencies. We cannot supply retailers, wholesalers, brokers, or individuals. The Buyer agrees that the Products sold and delivered to The Buyer hereunder are to be used solely for Buyer's proper use and are not to be resold or used by customer for any other purpose or in any other manner whatsoever. The Buyer's orders are thereafter subject to our written confirmation of the order, and, prior to such acceptance, may be refused or canceled by The Seller and/or The Buyer for any reason, including our inability to supply, or if The Buyer could not be identified.

Orders may be placed by email, website, or mail. Orders should be accompanied by a delivery and invoicing address, a Purchase Order Number, and a confirmation of the acceptation of the price of products, delivery cost, and our present Terms and Conditions. Chemily, LLC validates the order by sending written confirmation of the order. Order through email at sales@chemilyus.com. Order through website at www.chemilyglycoscience.com. Order through mail to the following address: Chemily Glycoscience 58 Edgewood Ave NE, Floor 1 Atlanta, GA 30303.

Products. Our products are supplied solely for research purposes and for use in the laboratory by experienced and qualified personnel. They are not intended for human consumption; in particular, they are not for nutritional, drug use, or human experimentation. They are not intended for resale. Any other use must be approved and confirmed in writing by Chemily, LLC.

All our products should be handled by qualified personnel only; trained in laboratory procedures, and familiar with potential hazards. Information is not available on the possible hazards of many compounds. The absence of a warning must not be interpreted as indication of safety. The ultimate responsibility for the proper handling of any product lies with the user.

Prices. All prices are listed in United States dollars. Duty, applicable taxes, and shipping fees are appropriated upon confirmation of the order. Products and prices are correct at the time of printing and order on the website, but are subject to change without notice. The prices payable for the goods shall be those contained in The Seller's price list current at the time of dispatch, or confirmed on request by The Seller. Quotations are valid for 30 days from the date on the quotation. Prices for orders placed after this period must be re-confirmed by The Seller. We overcharge transportation cost and any applicable taxes to the customer.

Payment. Payments can be made by check or wire transfer. Chemily, LLC will invoice you for the product(s) purchased by your company and all charges are binding when we confirm your order. Unless we have agreed otherwise in writing, you will pay us within 30 days from our invoice issue date. You will make all payments in U.S. Dollars.

Check: Checks are to be made payable to Chemily, LLC and mailed to Chemily Glycoscience 58 Edgewood Ave NE, Floor 1 Atlanta, GA 30303 USA.

Wire transfer: To pay via wire transfer, please request "Payment Instructions" through sales@chemilyus.com.

Data Sheets. All orders dispatched will be accompanied by certificates of analysis or specifications. The data sheets are made on the base of our best knowledge and The Seller shall have no liability for any deviation from this. To complete the data sheet in accordance with regulations, The Buyer shall provide assistance to The Seller in connection with the collection of information in connection with the Products complete and delivered on first request.

Shipping. Delivery dates mentioned in any quotation, acknowledgement of order, or elsewhere are approximate only and not of any contractual effect, and The Seller shall not be under any liability to The Buyer in respect of any failure to deliver on any particular date(s). In case of inability of The Seller to deliver the products on planned delivery dates, The Buyer will be informed. Small packages will be sent by FedEx Express Saver. Larger packages will be sent by FedEx Express Ground. The Buyer shall meet the overcharge for shipping requested by The Seller. Whenever authorizations concerning import, exchange transactions, or other formalities are required for the importation of our Products into the country of destination, or for the payment thereof, the obtaining of such authorizations and compliance therewith within the applicable time period is coordinated with The Buyer and managed by The Seller. **Partial shipment:** A partial shipment of Products in stock can be requested at any time after confirmation of the order. An invoice will be processed for each partial shipment. Shipping fees will be invoiced for each additional shipment requested.

Storage. Our products are mainly sold as freeze dried. Most products are stable for some years at -20°C, provided they are not opened.

Variation. The Seller shall be determined to have fulfilled its contractual obligations in respect of any delivery though the quantity may be up to 10 % more or less than the quantity specified in the contract and in such event The Buyer shall pay for the actual quantity delivered.

Availability. Some products require lengthy re-make periods and sometimes are derived from raw materials which have uncertain or intermittent availability. They may therefore be unavailable for considerable periods of time. The Buyer cannot drive any right from any delay, which is no longer than two months (one month in case of prepayment). Thereafter, The Buyer's rights are limited to cancellation of the undelivered part of the order, prepayments are refunded.

Distribution. Some products could be delivered by local distributors. In this case The Seller is bound by the contract drawn between The Seller and distributor.

Warranty. In case of proven default in a product or delivery, The Seller's responsibility cannot exceed the replacement of the delivered product by a conform one. The Seller shall not in any event be liable for any lost, damage, delay, costs, diminished profits, revenues, or opportunities; or any other incidental, special, indirect, or consequential damages of any kind or nature whatsoever arising from the contract supported by The Buyer. The Buyer must notify The Seller within 30 days after the Products have been received or such Products shall be deemed to have been accepted. Any return of product is subject to prior agreement between The Buyer and The Seller. Any product return without such agreement will be kept in custody and will not give rise to any reimbursement. All costs and expenses connected to such return will be charged to The Buyer.

Intellectual Property. The Buyer shall not use The Seller's Intellectual Property Rights in a manner that disparages the other party or its products or services, blurs, dilutes, or otherwise diminishes The Seller's trade names, trademarks, service marks, or other intellectual property, or portrays The Seller or its products or services in a false, competitively adverse or poor light. The buyer shall comply with The Seller's requests as to the use of The Seller's Property Rights and will avoid any action that diminishes the value of such marks. Without limiting the foregoing, The Buyer shall not, without written permission from The Seller use any of The Seller's brand names, keywords, or derivations of either of the above for any purpose.

Governing Law. This contract shall be governed in all respects by the United States federal and Georgia state laws, and the parties hereby submit to the jurisdiction of the United States courts.

Derogation. Any derogation to these terms and conditions are specified in writing in correspondence signed by Chemily, LLC.

These Sales Terms & Conditions are subject to change without notice.