

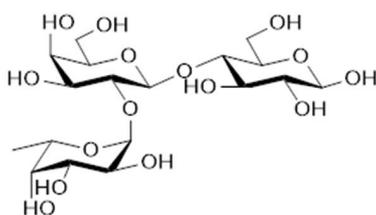
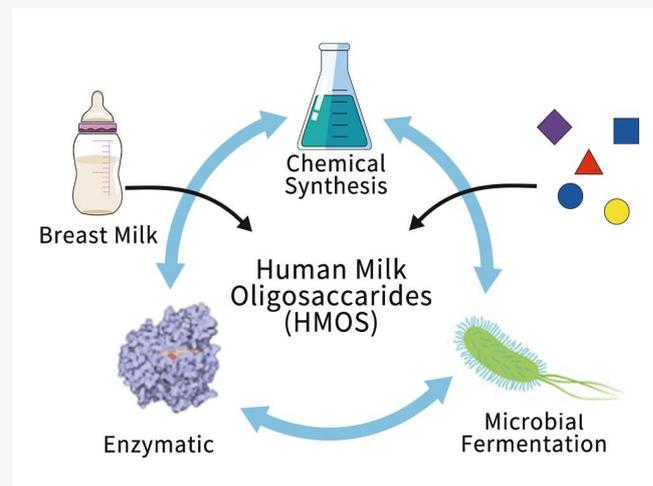
# HMOs

Human milk oligosaccharides(HMOs) are more than 100 kinds of oligosaccharides and derivatives, which are naturally present in breast milk. They are composed of five basic structures: D-glucose, D-galactose, N-acetylglucosamine, L-fucose and N-acetylneuraminic acid. Its content in human milk is about 5-15g/L, which is the second largest carbohydrate component and the third largest nutrient component next to lactose. It is also one of the important components to ensure the healthy growth of infants and can be widely used in the fields of formula milk powder, dairy products, beverages, special medical food, etc.

Breast milk contains more 2'-fucosyllactose (2'-FL), 3'-fucosyllactose (3'-FL), lacto-N-tetraose (LNT), lacto-N-neotetraose (LNnT), 3'-sialyl lactose (3'-SL) and 6'-sialyl lactose (6'-SL). Among them, 2'FL, DFL, LNnT, LNT, 3'SL, 6'SL, etc. have been used in infant food formula, food and beverage.

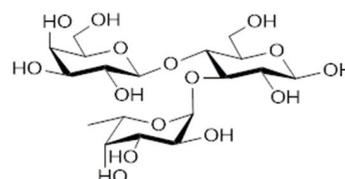
## Our advantages

Glycogene has made use of its powerful chemical enzymatic synthesis biological platform to synthesize 2'FL, DFL, LNnT, LNT and other industrial grade human milk oligosaccharides by enzymatic synthesis and whole cell fermentation. Among them, 3'SL, 6'SL, 3FL and other industrial grade human milk oligosaccharides have achieved kilogram grade enzymatic synthesis.



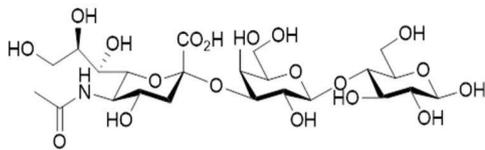
Growth of probiotics.  
Cognitive memory.  
Positive immunity.  
Immunization and digestive system development of premature infants.

**2'-Fucosyllactose [GS-3001]** Improve three subtypes of IBS.  
41263-94-9



Stimulate the growth of beneficial bifidobacteria.

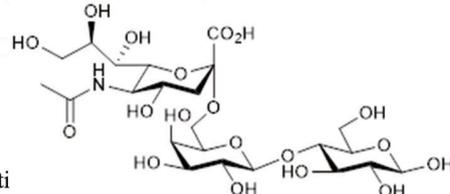
**3'-Fucosyllactose [GS-3002]**  
41312-47-4



**3'-Sialyllactose [GS-3003]**

128596-80-5

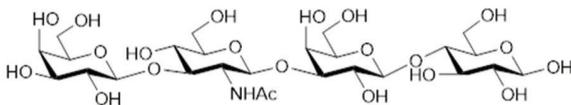
Support infant brain development.  
Reduce the risk of bacterial and protein adhesion in the intestine



**6'-Sialyllactose [GS-3004]**

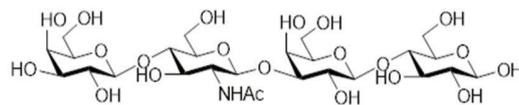
157574-76-0

Support infant brain development.  
Reduce the risk of bacterial and protein adhesion in the intestine.  
Support human immunity.



**Lacto-N-tetraose [GS-3005]**

14116-68-8

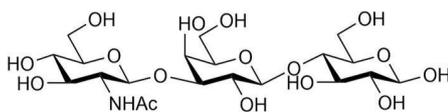
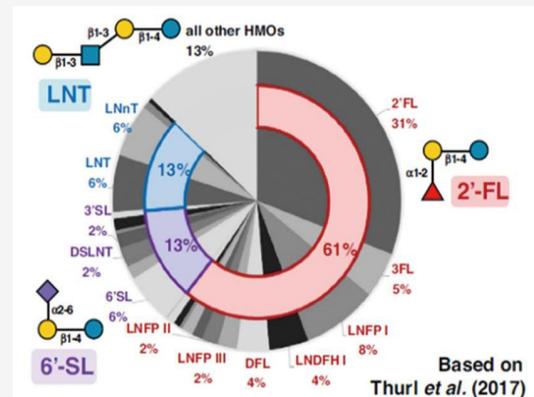


**Lacto-N-neotetraose [GS-3006]**

13007-32-4

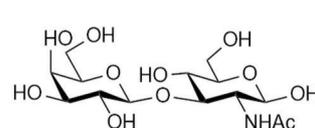
HMOs as natural anti adhesion agent. It protects breastfed children by preventing pathogens from attaching and reducing the risk of gastrointestinal, urogenital and respiratory tract infections (LNT, LNnT) caused by species such as *Campylobacter jejuni*, *Escherichia coli* and *Streptococcus pneumoniae*.

Glycogene provides scientific research level high-quality rare human lactooligosaccharides for researchers to use. LNFP I, LNFP II, LNFP III, LNDFH I, LNFP V, LSTa (acid), LSTb (acid), LSTc (acid), LNDFH I, LNDFH II, LNnDFH I, LNnDFH II, DSLNT (acid), TFLNH I Lex/Leb, etc.



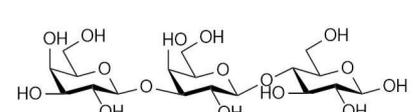
**LNT II [GS-3024]**

75645-27-1



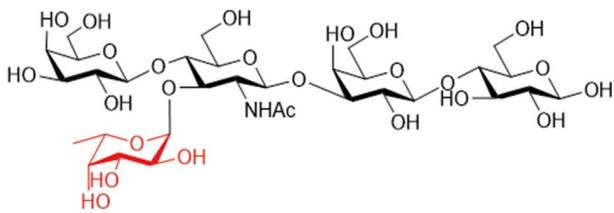
**Lacto-N-biose(LNB) [GS-3025]**

7578-25-8



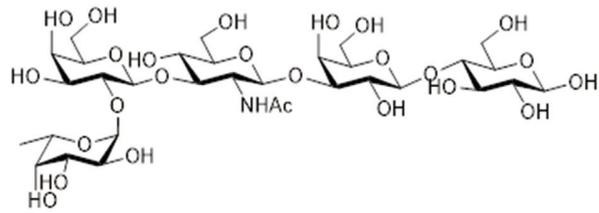
**3'-Galactosyllactose [GS-3026]**

7578-25-8



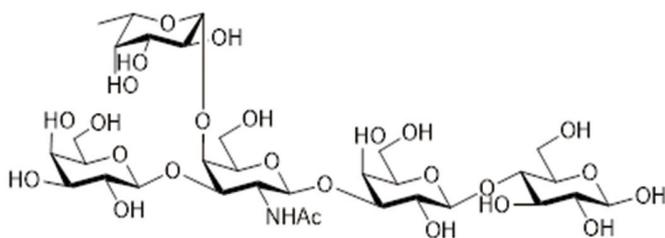
**LNFP** [GS-3017]

N/A



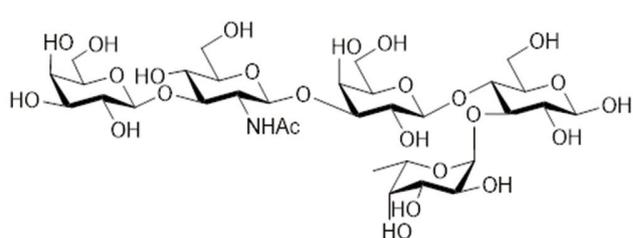
**Lacto-N-fucopentaose I (LNFPI)** [GS-3007]

7578-25-8



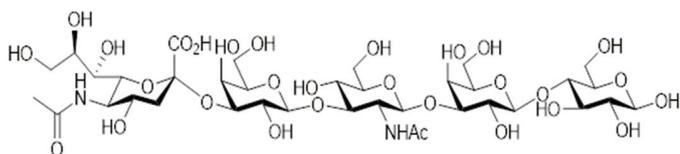
**Lacto-N-fucopentaose II** [GS-3008]

21973-23-9



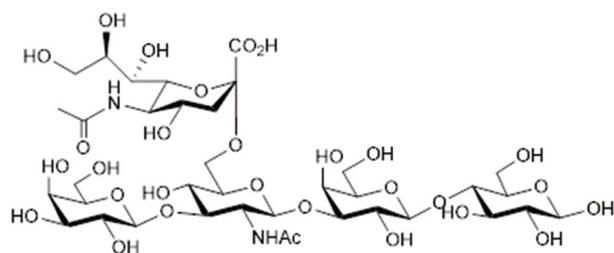
**LNFP V** [GS-3022]

60254-64-0



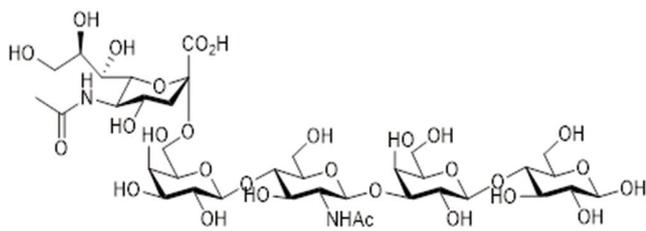
**LSTa (acidic)** [GS-3023]

64003-53-8



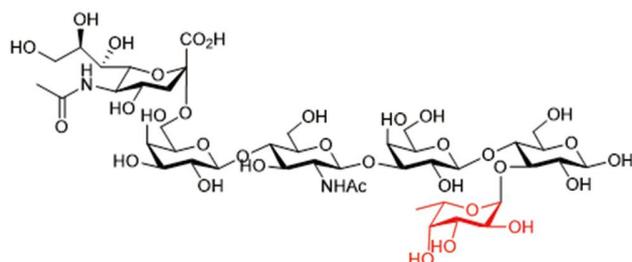
**LSTb** [GS-3009]

64003-54-9



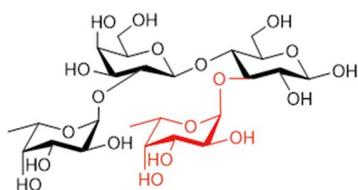
**LSTc** [GS-3010]

64003-55-0



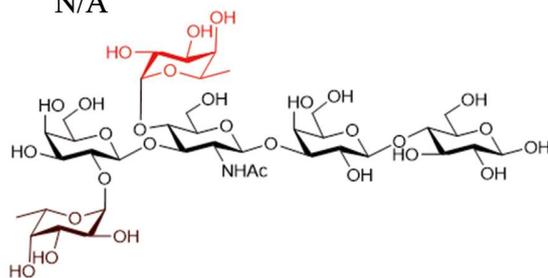
**F-LSTc** [GS-3021]

N/A



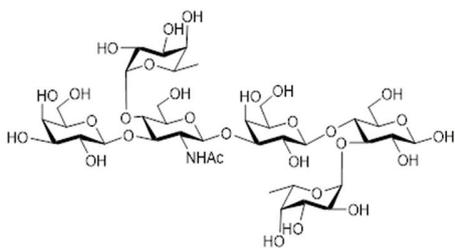
**DFL** [GS-3016]

20768-11-0



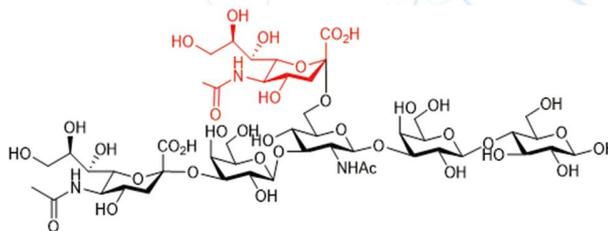
**LNDFH I** [GS-3018]

16789-38-1



**LNDFH II [GS-3019]**

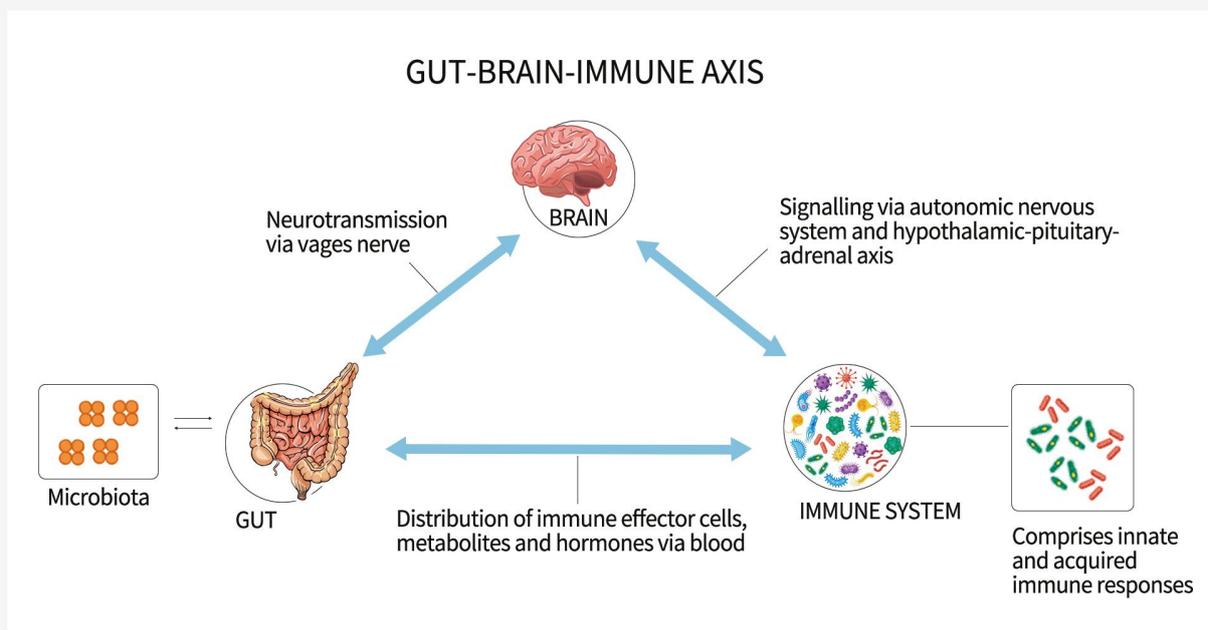
62258-12-2



**LNnDFH I [GS-3020]**

N/A

Researchers found that human milk oligosaccharides have a wide range of health benefits for newborns, such as preventing pathogen adhesion, direct and systematic effects on epithelial cells, acting as anti adhesion antibacterial agents, immune modulators, intestinal cell response regulators, providing prebiotic effects, neurodevelopmental and cognitive effects. Prevent mother to child transmission of human immunodeficiency virus (HIV) (Lex (LNFP III)) and provide sialic acid as a nutrient for brain development and cognition.



# Glycogene

+1 678 691 3660

sale@glycogene.com

www.glycogene.com