OligoTech® - Human milk oligosaccharides - HMOs

Elicityl is developing a unique offer of HMOs available at quantities and cost not seen before.

Human milk oligosaccharides (HMOs) are recognized as natural molecules with high potential for nutritional and biomedical applications.
Multiple biological activities are attributed to HMOs. They have been described for their prebiotic effects, to act as receptors analogs to inhibit the adhesion of pathogens on epithelial surface and to interact directly with immune system. HMOs may also play a role in postnatal brain development.

15 HMOs are offered in prepacks of 5 mg, 25 mg, 100 mg, 1 g and 5 g.

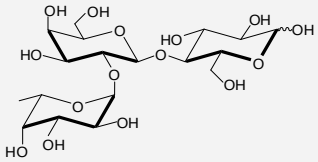
- Each oligosaccharide results from a specific biological process of production developed by Elicityl
- Compounds available in Reagent Grade (purity >95%) or Technical Grade
- Bulk quantities available on specific demand

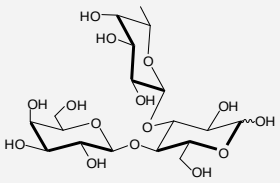
Neutral human milk oligosaccharides		
GLY031	**2'-FL**	**2'Fucosyllactose** (Blood group O/H antigen triaose type 5)
GLY060	**3-FL**	**3 Fucosyllactose**
GLY010	**LNT**	**Lacto-N-tetraose** (Core structure type1)
GLY021	**LNnT / *neo*LNT**	**Lacto-N-*neo*tetraose** (Core structure type 2)
GLY033-1	**LNFP I**	**Lacto-N-fucopentaose I** (Blood group H antigen pentaose type 1)
GLY055	**LNDFH II**	**Lacto-N-difucohexaose II** (Lewis^a hexaose)
GLY051	**LNnDFH II**	**Lacto-N-*neo*difucohexaose II** (Lewis^X hexaose)
GLY022	**Para-LNnH**	**Para-Lacto-N-*neo*hexaose**
GLY023	**LNnO**	**Lacto-N-*neo*octaose**
GLY062	**LNFP V**	**Lacto-N-fucopentaose V**
GLY061	**LNnFP V**	**Lacto-N-*neo*fucopentaose V**
Acidic human milk oligosaccharides		
GLY081	**LSTa**	**LS-Tetrasaccharide a / Sialyl-lacto-N-tetraose a**
GLY090	**3'-SL**	**3'Sialyllactose** (GM3 ganglioside oligosaccharide)
Minor human milk oligosaccharides		
GLY035	**P_I**	**Blood group A antigen tetraose type 5**
GLY037-1	**P_{II}**	**Blood group A antigen hexaose type 1**

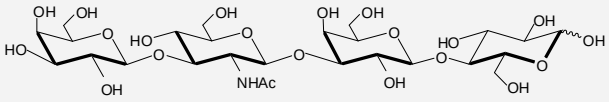
Quality control

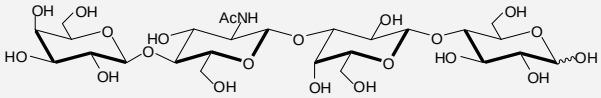
All of the HMOs are analyzed by Nuclear Mass Spectrometry (NMR) and High Performance Anion Exchange Chromatography (HPAEC) for structure validation and determination of their level of purity.

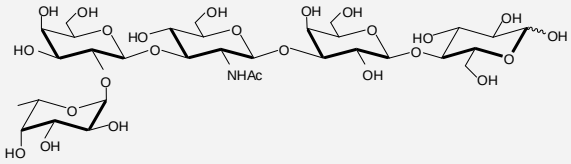
Neutral human milk oligosaccharides

GLY031	**2'-FL / 2'Fucosyllactose**
Fucα1-2Galβ1-4Glc	Blood group (O) H triaose antigen type 5
	$C_{18}H_{32}O_{15}$ FW 488.44 CAS [41263-94-9] Reference: Kunz C *et al*. 2000 **5 mg, 25 mg, 100 mg, 1 g, 5 g**

GLY060	**3-FL / 3 Fucosyllactose**
Galβ1-4(Fucα1-3)Glc	
	$C_{18}H_{32}O_{15}$ FW 488.44 CAS [41312-47-4] Reference: Kunz C *et al*. 2000 **5 mg, 25 mg, 100 mg, 1 g, 5 g**

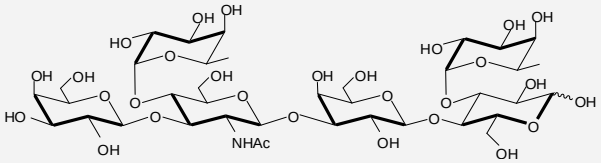
GLY010	**LNT / Lacto-N-tetraose**
Galβ1-3GlcNAcβ1-3Galβ1-4Glc	Core structure type 1
	$C_{26}H_{45}NO_{21}$ FW 707.63 CAS [14116-68-8] Reference: Kunz C *et al*. 2000 **5 mg, 25 mg, 100 mg, 1 g, 5 g**

GLY021	**LNnT/ neo-LNT / Lacto-N-*neo*tetraose**
Galβ1-4GlcNAcβ1-3Galβ1-4Glc	Core structure type 2
	$C_{26}H_{45}NO_{21}$ FW 707.63 CAS [13007-32-4] Reference: Kunz C *et al*. 2000 **5 mg, 25 mg, 100 mg, 1 g, 5 g**

GLY033-1	**LNFP I / Lacto-N-fucopentaose I**
Fucα1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glc	Blood group O (H) antigen pentaose type 1
	$C_{32}H_{55}NO_{25}$ FW 853.77 CAS [7578-25-8] Reference: Kunz C *et al*. 2000 **5 mg, 25 mg, 100 mg, 1 g, 5 g**

GLY055 — LNDFH II / Lacto-N-difucohexaose II

Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4(Fucα1-3)Glc



Lewis[a] (Le[a]) hexaose

$C_{38}H_{65}NO_{29}$

FW 999.91

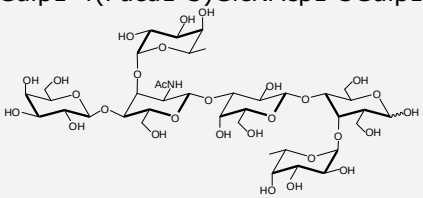
CAS [7578-25-8]

Reference: Kunz C *et al*. 2000

5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY051 — LNnDFH / Lacto-N-*neo*difucohexaose

Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)Glc



Lewis[X] (Le[X]) hexaose

$C_{38}H_{65}NO_{29}$

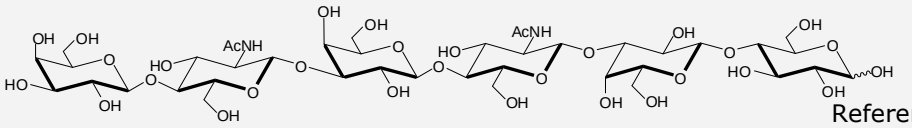
FW 999.91

Reference: Perret S *et al*., 2005

5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY022 — Para-LNnH / Para-Lacto-N-*neo*hexaose

Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4Glc



$C_{40}H_{68}N_2O_{31}$

FW 1072.96

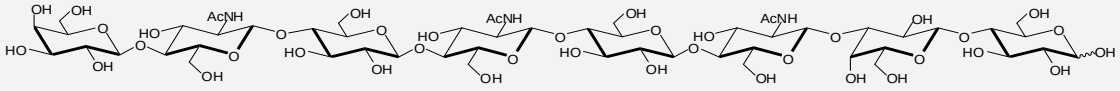
CAS [64331-48-2]

Reference: Boehm G *et al*. 2003

5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY023 — LNnO / Lacto-N-*neo*octaose

Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4Glc



$C_{54}H_{91}N_3O_{41}$

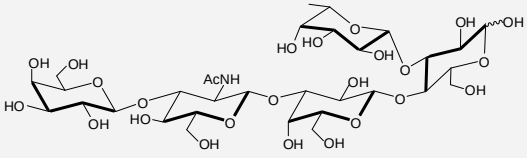
FW 1438.29

Reference: Kunz C *et al*. 2000

5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY062 — LNFP V / Lacto-N-fucopentaose V

Galβ1-3GlcNAcβ1-3Galβ1-4(Fucα1-3)Glc



$C_{32}H_{55}NO_{25}$

FW 853.77

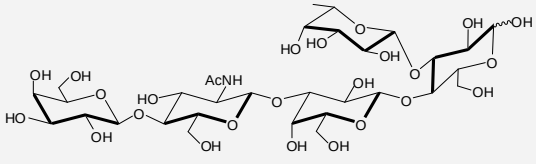
CAS [60254-64-0]

Reference: Kunz C *et al*. 2000

5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY061 — LNnFP V / Lacto-N-*neo*fucopentaose V

Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)Glc



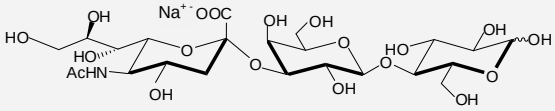
$C_{32}H_{55}NO_{25}$

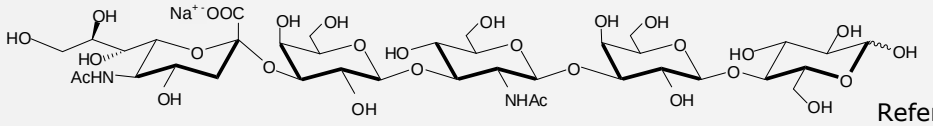
FW 853.77

Reference: Perret S *et al*., 2005

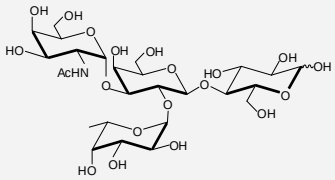
5 mg, 25 mg, 100 mg, 1 g, 5 g

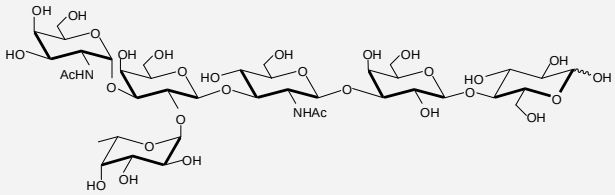
Acidic human milk oligosaccharides

GLY090	**3'-SL / 3'Sialyllactose**	Sodium salt
	Neu5Acα2-3Galβ1-4Glc	GM3 ganglioside oligosaccharide
		$C_{23}H_{38}NO_{19}Na$
		FW 655.53
		CAS [35890-38-1]
		Reference: Kunz C *et al*. 2000
		5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY081	**LSTa / LS-Tetrasaccharide a / Sialyllacto-N-tetraose a**	Sodium salt
	Neu5Acα2-3Galβ1-3GlcNAcβ1-3Galβ1-4Glc	
		$C_{37}H_{61}N_2O_{29}Na$
		FW 1020.86
		CAS [64003-58-5]
		Reference: Kunz C *et al*. 2000
		5 mg, 25 mg, 100 mg, 1 g, 5 g

Minor human milk oligosaccharides

GLY035	**P_I / Blood group A antigen tetraose type 5**	
	GalNAcβ1-3(Fucα1-2)Galβ1-4Glc	$C_{26}H_{45}NO_{20}$
		FW 691.62
		CAS [59957-92-5]
		Minor HMO of blood group A secretor individuals
		Reference: Kobata A. 2010
		5 mg, 25 mg, 100 mg, 1 g, 5 g

GLY037-1	**P_{II} / Blood group A antigen hexaose type 1**	
	GalNAcβ1-3(Fucα1-2)Galβ1-3GlcNAcβ1-3Galβ1-4Glc	$C_{40}H_{68}N_2O_{30}$
		FW 1056.96
		Minor HMO
		of blood group A secretor individuals
		Reference: Kobata A. 2010
		5 mg, 25 mg, 100 mg, 1 g, 5 g

References

- C Kunz *et al.* Oligosaccharides in Human Milk: Structural, Functional, and Metabolic Aspects. 2000. Ann. Rev. Nutr. 20, 699-722.
- G Boehm and B Stahl. Oligosaccharides. 2003. In Functional dairy products. p203-243. T Mattila-Sandholm and M Saarela, Editors. Boca Raton: CRC Press.
- S Perret *et al*. Structural basis for the interaction between human milk oligosaccharide and the bacterial lectin PA-IIL of *Pseudomonas aeruginosa*". 2005. Biochem J. Jul 15;389,325-332.
- G Boehm and B Stahl. Oligosaccharides from Milk. 2007. J. Nutr. 137, 847S-849S.
- A Kobata. Structures and application of oligosaccharides in human milk. 2010. Proc. Jpn. Acad. 86,731-749.

This selection of HMOs is extracted from the OligoTech® catalogue, our offer of oligosaccharides and polysaccharides. Full catalogue can be downloaded from www.elicityl.fr.

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