glyXera GmbH
Brenneckestraße 20, Zenit
39120 Magdeburg, Germany

+49 391 6117 251
+49 391 6117 255
info@glyxera.com

Certificate of Analysis

Product Name
Lacto-N-tetraose, APTS-labeled

Alternative Name(s)
LNT

Catalogue Number
OS-011-A-10pm-01

Lot Number
P02S04011L1R1-01901

Pack Quantity
10 pmol

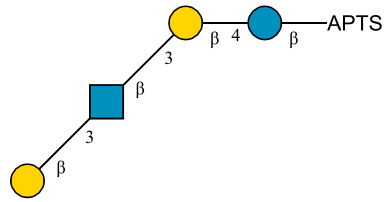
Purity
> 80% by xCGE-LIF

Formulation
dry solid

Shipping Conditions
ship at ambient temperature

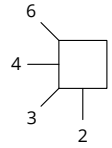
Storage Conditions
store at -20°C in the dark

Stability/Expiration
stable for 6 months after reconstitution or until June 2025 in dry state



Symbol Legend[1,2]
- Glucose
- Galactose
- N-Acetylglucosamine
- Fucose

Linkage Info



Structure
Galβ1-3GlcNAcβ1-3Galβ1-4Glc-APTS

Monoisotopic Mass[3,4]
707.2484 + 440.9647 = 1148.2131

Description
Lacto-N-tetraose is a non-fucosylated, non-sialylated Galβ1–3GlcNAc core (type 1) human milk oligosaccharide (OS)[5]. The reducing terminus of the product is derivatized with the fluorescent dye 8-Aminopyrene-1,3,6-trisulfonic acid (APTS).

Notes
This product is intended for research and development purposes only; not for use in diagnostic procedures or for human/animal consumption. The performance of this product is guaranteed only under the stated handling and storage conditions.

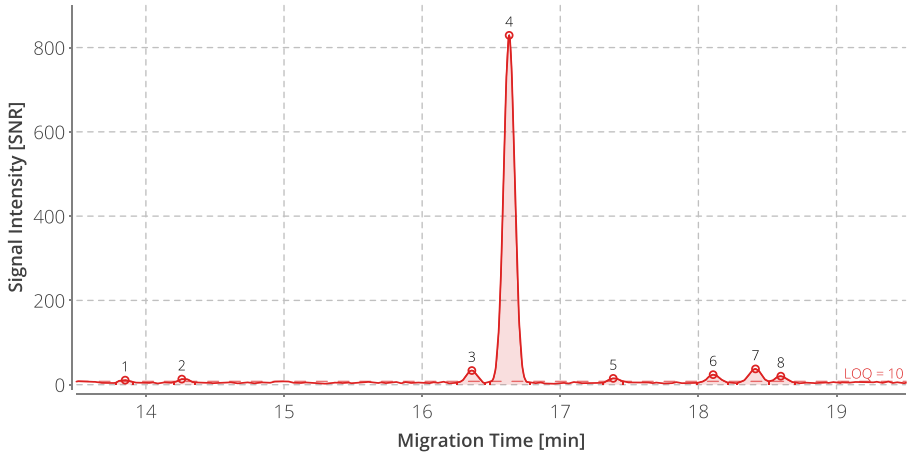
Signed

QC Manager

August 27, 2020
Date

Quality Control

The composition and purity of the product was assessed via multiplexed capillary gel electrophoresis with laser-induced fluorescence detection (xCGE-LIF) using glyXera's proprietary high-performance glycoanalysis system glyXbox™.



Peak		Name[5]	Area [%]	Peak		Name[5]	Area [%]
1	–		1.12	5	–		1.63
2	–		1.52	6		LNFP II	3.00
3		LNnT	3.63	7		LNFP I	4.58
4		**LNT**	**82.07**	8		LNFP III	2.45

Quality Control Materials & Parameters

(for more details, contact support@glyxera.com)

Sample Amount
100 fmol (1 µL aq)

Injection Solution
C-glyXinj-02 (glyXera GmbH)

Separation Matrix
POP-6™ (Thermo Fisher Scientific)

Spectral Calibration Dye Set
glyXcal-DS3 (glyXera GmbH)

Alignment Standard
STD-glyXalign-01 (glyXera GmbH)

Separation Distance
50 cm

Injection Parameters
5 s @ 15 kV

Run Voltage
15 kV

Intended Use

The product is intended for use as a standard in qualitative and semiquantitative analytical procedures, including:

- as identification and migration time standard in capillary (gel) electrophoresis,
- as identification and retention time standard in liquid chromatography.

Instructions for Use

The APTS-labeled product is shipped at ambient temperature as a dried solid. Upon receipt, store the product at -20°C in the dark.

Reconstitution

1. **Thaw** the unopened vial at ambient temperature for ⧖ **10 min**
2. **Centrifuge** the vial at ↻ **1500 g** for ⧖ **30 s**
3. **Dissolve** the dry product using the desired volume of solvent
4. **Vortex** the solution for ⧖ **30 s**
5. **Centrifuge** the solution at ↻ **1500 g** for ⧖ **30 s**

General Remarks

- During reconstitution, make sure to also rinse the cap lining.
- Always centrifuge the reconstituted product prior to use.
- Confirm that any materials used in conjunction with the product are free of glycosidases.
- Avoid repeated freeze-thaw cycles as well as temperature/pH extremes to prevent premature product degradation.
- Store reconstituted product at -20°C in the dark.
- Use product within 6 months after reconstitution.

Recommendations for Use in xCGE-LIF Applications (for more details, contact support@glyxera.com)

In a typical xCGE-LIF-based analysis, 100 fmol of APTS-labeled OS product is used.

1. **Reconstitute** the contents of one vial using ♦ **100 µL** of ultrapure water[6] (as per the instructions above)
2. **Mix** each ♦ **1 µL** of dissolved product with ♦ **1 µL** of alignment standard as well as with ♦ **9 µL** of injection solution
3. **Transfer** prepared material to a 384-well microtiter plate

The prepared sample is now ready to be measured on a glyXbox™ analysis system.

Note: Repeated electrokinetic injections from the same sample well can cause a decrease in the detected absolute signal intensity, but the relative composition of the sample contents remains constant.

Warranties & Liabilities

glyXera warrants that the product conforms to the analytical specifications stated within this certificate. Should the product fail due to reasons other than improper handling, glyXera will, at its option, provide a replacement free of charge or refund the purchase price.

This warranty is exclusive and glyXera makes no other guarantees, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose.

glyXera shall not be liable for any incidental, consequential or contingent damages.

References

[1] Varki A., et al.; Symbol Nomenclature for Graphical Representation of Glycans. Glycobiology, 2015, 25: 1323–1324.

[2] Tsuchiya S. et al.; Implementation of GlycanBuilder to draw a wide variety of ambiguous glycans. Carbohydrate Research, 2017, 445: 104–116.

[3] ExPASy: SIB Bioinformatics Portal; GlycanMass. http://web.expasy.org/glycanmass/

[4] Reusch D. et al.; High-throughput glycosylation analysis of therapeutic immunoglobulin G by capillary gel electrophoresis using a DNA analyzer. mAbs, 2014, 6(1): 185–196.

[5] Urashima T. et al.; Human milk oligosaccharides as essential tools for basic and application studies on galectins. TIGG, 2018, 30(172): SE51–SE65.

[6] Melnik, L.A., et al.; Ultrapure Water: Properties, Production, and Use. J. Water Chem. Technol., 2019, 41: 143–150.

Revision History

#	Date	Revision Notes
1	6/18/20	Initial revision.