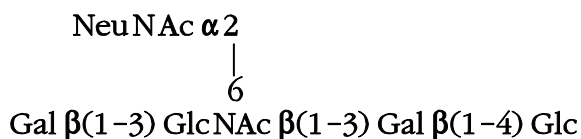


CERTIFICATE OF ANALYSIS

PRODUCT NAME: GLYKO® LS-TETRASACCHARIDE b (LST b)
PRODUCT CODE: GKAD-01018
LOT NUMBER: DP11G2702a
PACK SIZE: 500 µg (qualitative standard for glycan identification)
PURITY: ≥90% of glycan by HPLC
FORM: Dry solid
STORAGE: Store at -20°C before and after reconstitution
EXPIRATION: September 2016, may be used for 1 year after reconstitution

STRUCTURE:



QUALITY CONTROL:

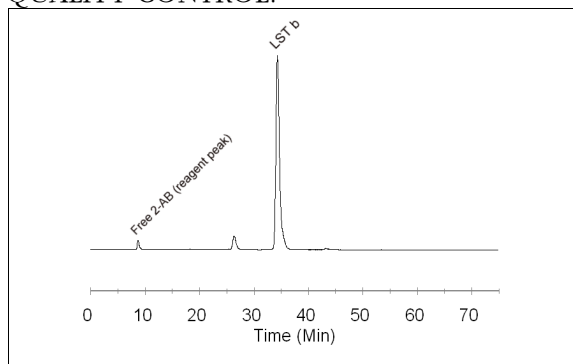


Figure 1 - HPLC results: LST b labeled according to the Signal™ 2-AB Labeling Kit (GKK-404) and analyzed on a GlycoSep™ N column (GKI-4728) in ammonium formate/acetonitrile.

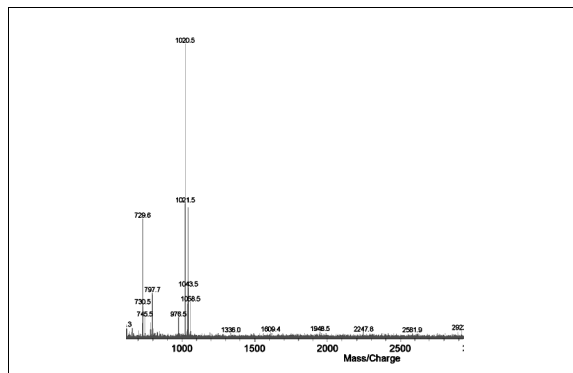


Figure 2 - MALDI-TOF of LST b [M + Na]⁺

Molecular Weight: 998.9 (average)¹

Structural Analysis: The purity and structural integrity of the glycan is assessed by one or more of the following techniques: HPLC², mass spectrometry^{3,4}, FACE^{®5}, ¹H-NMR⁶ and HPAEC-PAD⁷.

Applications:

- qualitative standard for various analytical procedures
- radio-labeling, fluorescent-labeling or formation of a variety of oligosaccharide derivatives
- substrate for glycosidase and glycosyltransferase assays
- establishing the specificity of lectins and monoclonal antibodies
- for the assay of sialidase

Reconstitution: Use HPLC-grade water or an aqueous buffer to dissolve the glycan. Store the reconstituted glycan at -20°C in working aliquots. Avoid multiple freeze/thaw cycles.

Handling: The oligosaccharide is shipped as a dried solid. Allow the unopened vial to reach ambient temperature and tap on a solid surface to ensure that most of the material is at the bottom of the vial. Gently remove the cap, add the desired volume of water or buffer, re-cap and mix thoroughly to redissolve all the oligosaccharide. For maximal recovery, ensure that the cap lining is also rinsed, and centrifuge the reconstituted vial briefly before use.

Make sure that any glassware, plasticware, solvents or reagents which come into contact with the glycan are free of glycosidases and carbohydrate contaminants.

Minimize exposure to elevated temperatures or extremes of pH. High pH will cause epimerization of the reducing terminal GlcNAc.

Isolation: LST b is typically found in human milk and can be isolated by a combination of charcoal adsorption, gel filtration and anion exchange chromatography⁸.

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Authorized Signature