

Ludger

Certificate of Analysis

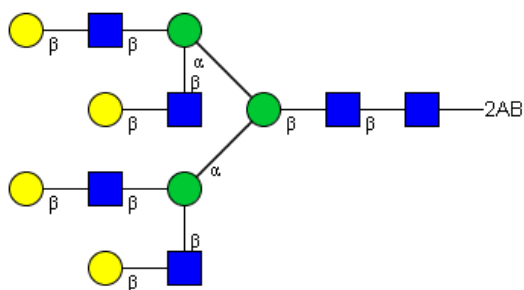
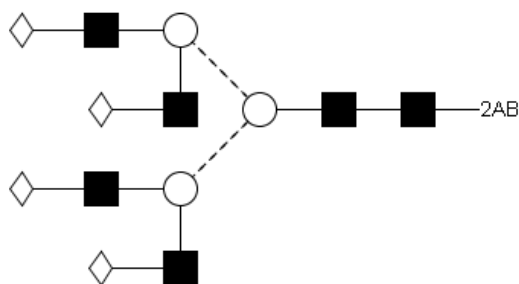
LudgerPure™ 2AB Labeled NA4 Glycan

Cat. #: CAB-NA4-01

Batch: A56E-03

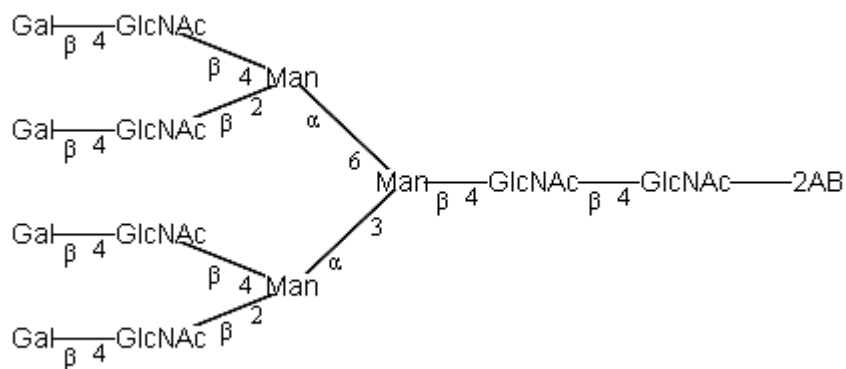
Size: approx. 100 pmol

Structure



Oxford Notation

CFG Notation



Text Notation

Purity: 89.2% 2AB labeled NA4 glycan, as assessed by HPLC - see Fig 1.

Amount: Sample vial determined to contain 108 pmols NA4 glycan – Test performed 14 Jan 2013.

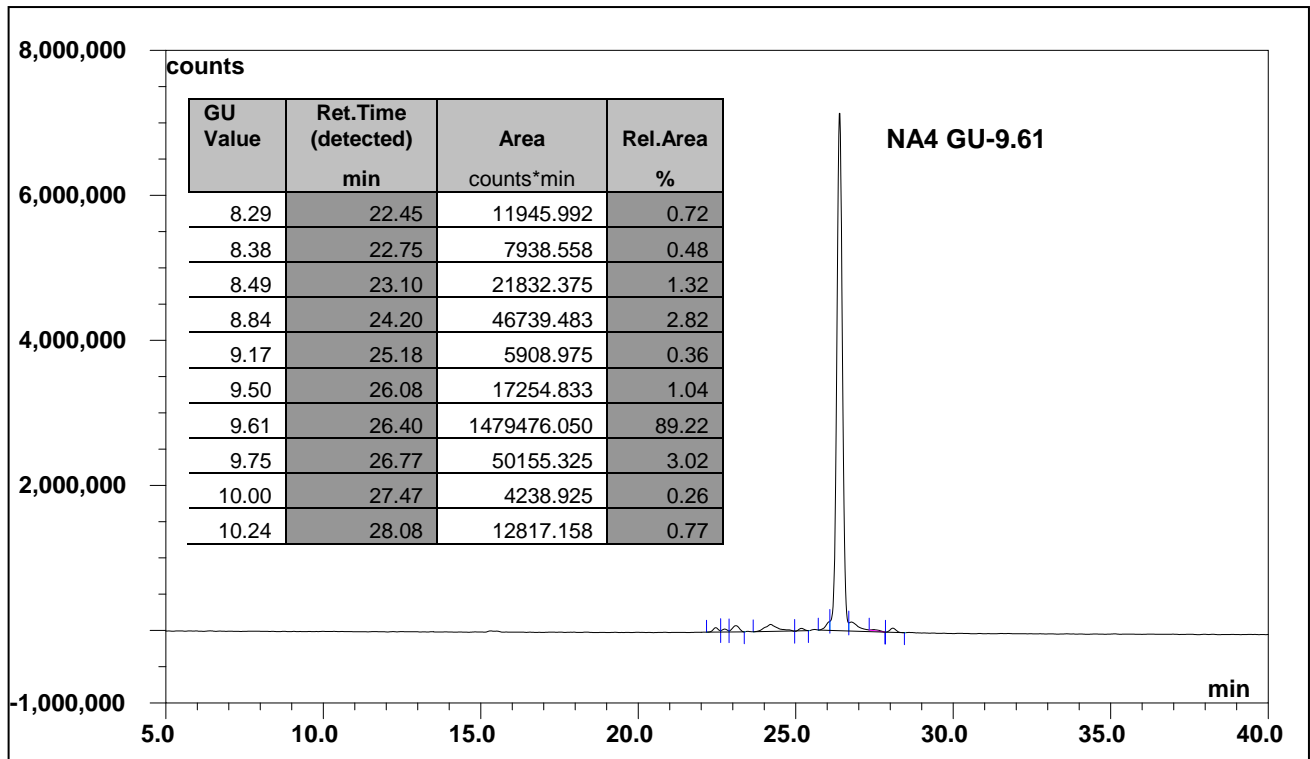


Figure 1: HILIC HPLC profile of 2AB labelled NA4 glycan (see method conditions below)
 (Cat. #: CAB-NA4-01, Batch A56E-03).

**NA4 glycan structure identified by MALDI, MS & HPLC (GU value comparison to GlycoBase). This structure is drawn according to the scheme developed by Oxford-Dublin Glycobiology Laboratory (see Fig 2).*

2-AB NA4 peak seen above, eluted at 26.4 minutes, under the following conditions:

HPLC Running Conditions:

Column: Waters BEH Glycan 1.7µm column (150mm)

Flow: See table below.

Temperature: 60 °C

Solvent A: 50mM ammonium formate pH 4.4 Solvent B: 100 % acetonitrile

Gradient:

Time (min)	%B	Flow rate (mL/min)
0.0	78.0	0.50
38.5	55.9	0.50
40.5	0.0	0.25
42.5	0.0	0.25
44.5	78.0	0.25
50.5	78.0	0.25
51.5	78.0	0.50
55.0	78.0	0.50

Detector: Dionex FLD-3000

Excitation wavelength: 330 nm

Emission wavelength: 420 nm

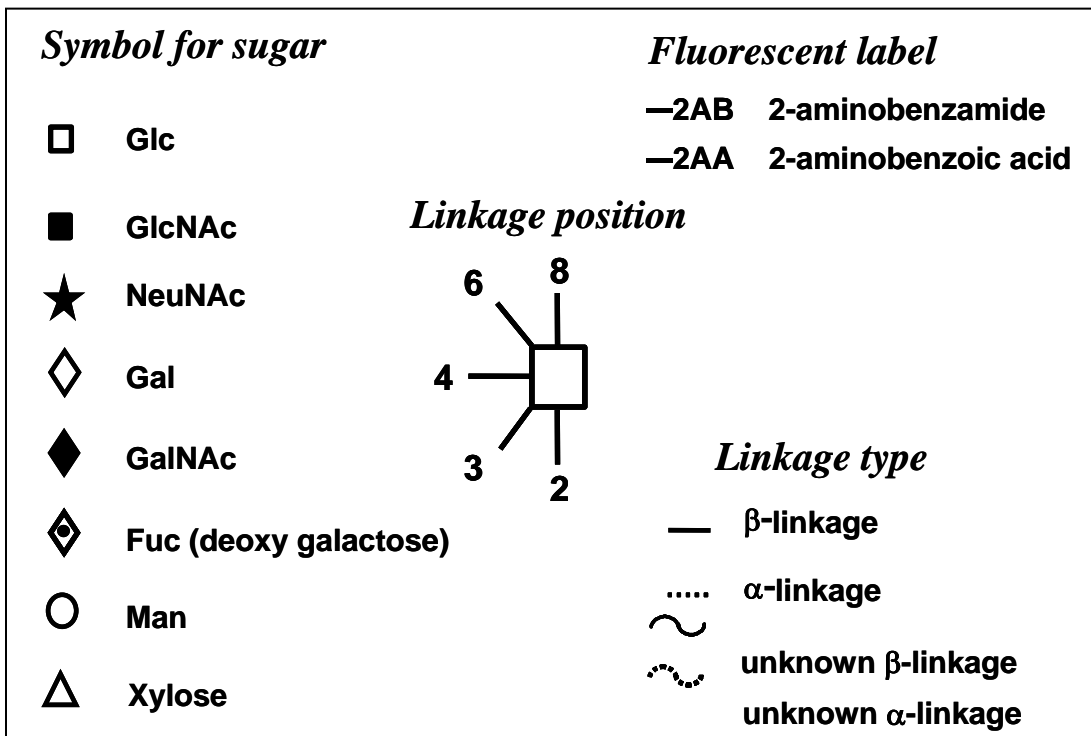


Figure 2: GlycoBase glycan structure key.