

## Certificate of Analysis

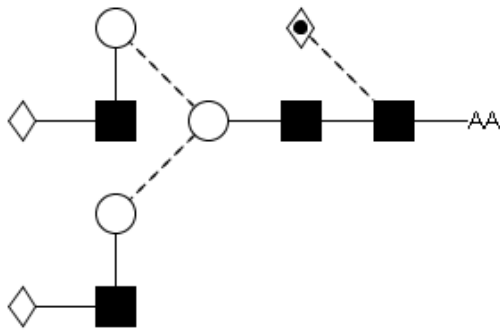
### LudgerPure™ 2AA Labeled NA2F Glycan

Cat. #: CAA-NA2F-01

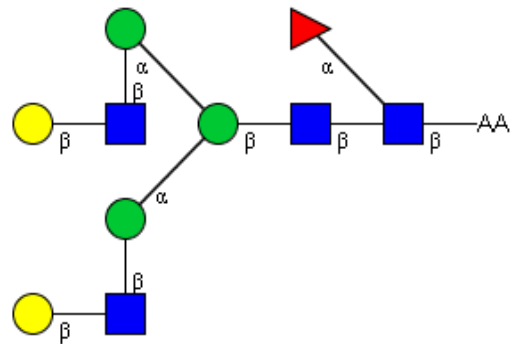
Batch: B65P-08

Size: approx. 100 pmol

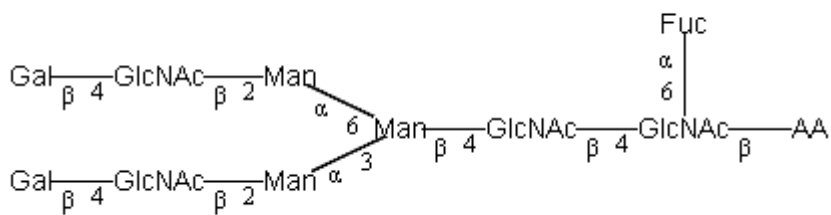
#### Structure



Oxford Notation



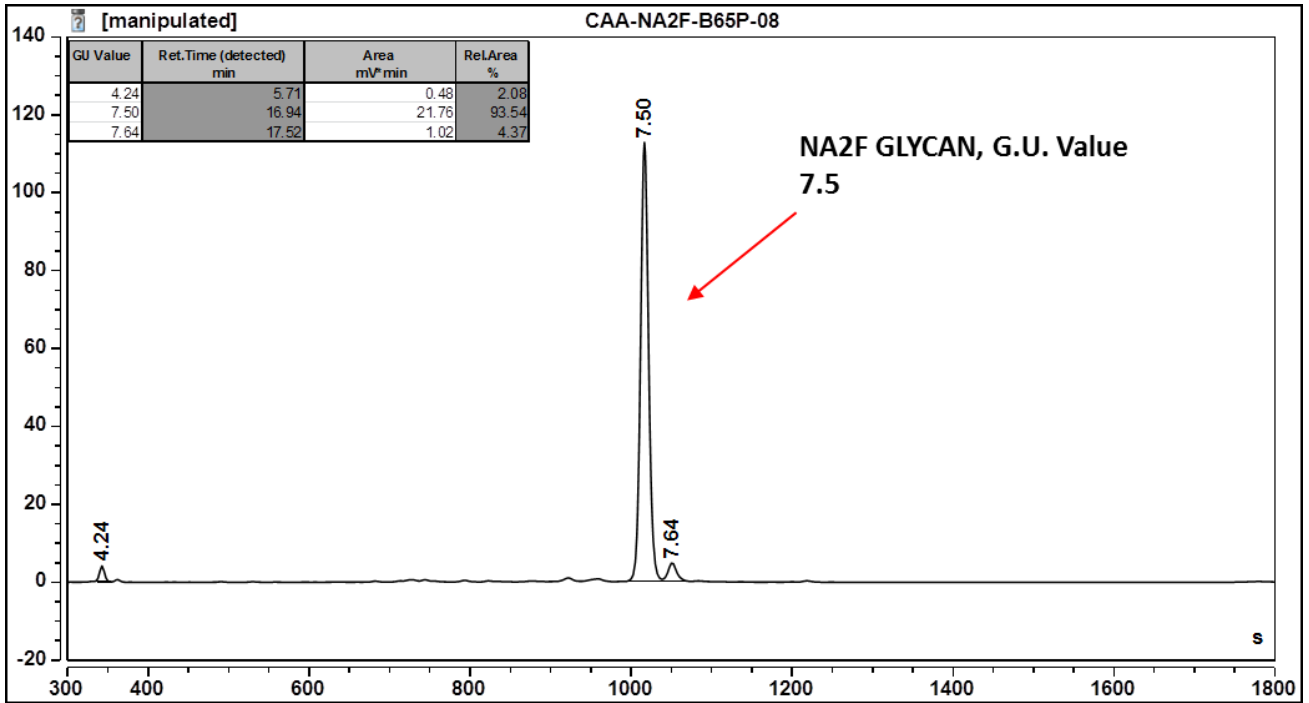
CFG Notation



Text Notation

**Purity:** 93.4% 2AB labeled NA2F glycan, as assessed by HPLC - see Fig 1.

**Amount:** Sample vial determined to contain 90.3 pmols NA2F glycan – Test performed 27 May 2016



**Figure 1:** HILIC HPLC profile of 2AA labelled NA2F glycan (see method conditions below)

(Cat. #: CAA-NA2F--01, Batch B65P-08).

*\*NA2F 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-AA NA2F peaks seen above, eluted at 16.9 & 17.5 minutes, under the following conditions:**

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

Flow: 0.4mL/min.

Temperature: 40 °C

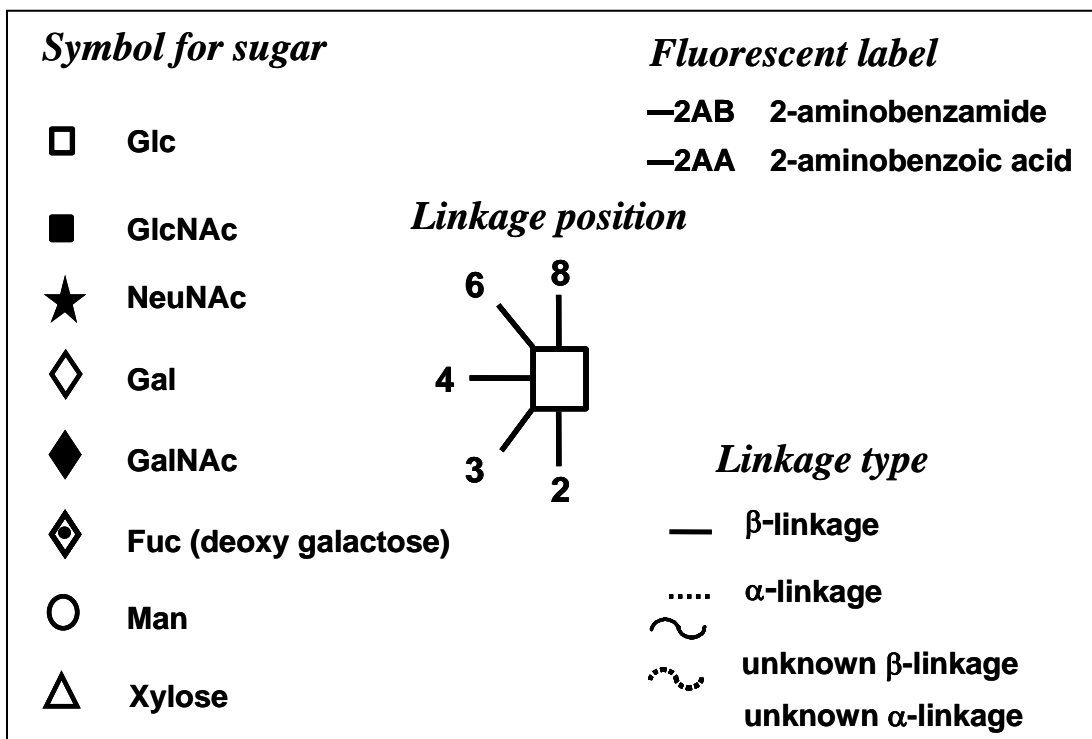
Solvent A: 50mM ammonium formate pH 4.4      Solvent B: 100 % acetonitrile

Gradient:

| Time (min) | %B    |
|------------|-------|
| 0.0        | 0.0   |
| 72.0       | 72.0  |
| 27.0       | 27.0  |
| 62.0       | 62.0  |
| 30.0       | 30.0  |
| 100.0      | 100.0 |

Detector: WATERS FLD-AQUITY Excitation wavelength: 250 nm

Emission wavelength: 428 nm



**Figure 2:** GlycoBase glycan structure key.