

## Technical Bulletin

# Procainamide Labeled Dextran Ladder

**Catalogue number SMB01378**

## Product Description

Glycans are associated with numerous biological processes along with their structural and binding properties. Functional roles of glycans are being discovered constantly. However, many glycans are not assigned with any functional aspect. To better understand their roles, glycan profiling is essential.

Use of Fluorescent labeled glycan as a standard is one of the preferred methods for profiling glycans by coupling Hydrophilic Interaction Liquid Chromatography (HILIC) with Fluorescent Detector (FD) or Mass Spectrometer (MS).

Procainamide Labeled Dextran ladder offered here enhances the benefits of fluorescence detection by numerous ways.

1. Fragmentation of labeled glycan occurs in a predictable manner resulting in abundant ions that can be easily assigned.
2. Each labeled glycan - Glucose Unit (GU) value increases in an incremental value of its GU thus helping an easy assignment of unknown glycans.
3. Assignment of separated glycans can be done against procainamide dextran ladder.
4. The observed GU values are between 2 to 30, thus enabling large glycan retention profiling.
5. Elution of glycans in ladder happens with increasing number of glucose units, thus enabling the use on day-to-day analysis in LC.
6. Increased ionization in negative ion mode during MS analysis.

## Components of procainamide labeled dextran ladder

Procainamide labeled dextran ladder containing increasing GU units. Each vial contains 200 µg of lyophilized powder.

## Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

Store the sealed vials at 4 °C.

## Preparation Instructions

One vial of procainamide labeled dextran ladder contains 200 µg of lyophilized powder. For reconstitution, the sample is dissolved in 100 µL of water followed by 100 µL of acetonitrile for a total dilution of 200 µL. This will result in 1 µg per mL.

**Note:** Dilution can be adjusted depending on the needs of experiments.

## Procedure

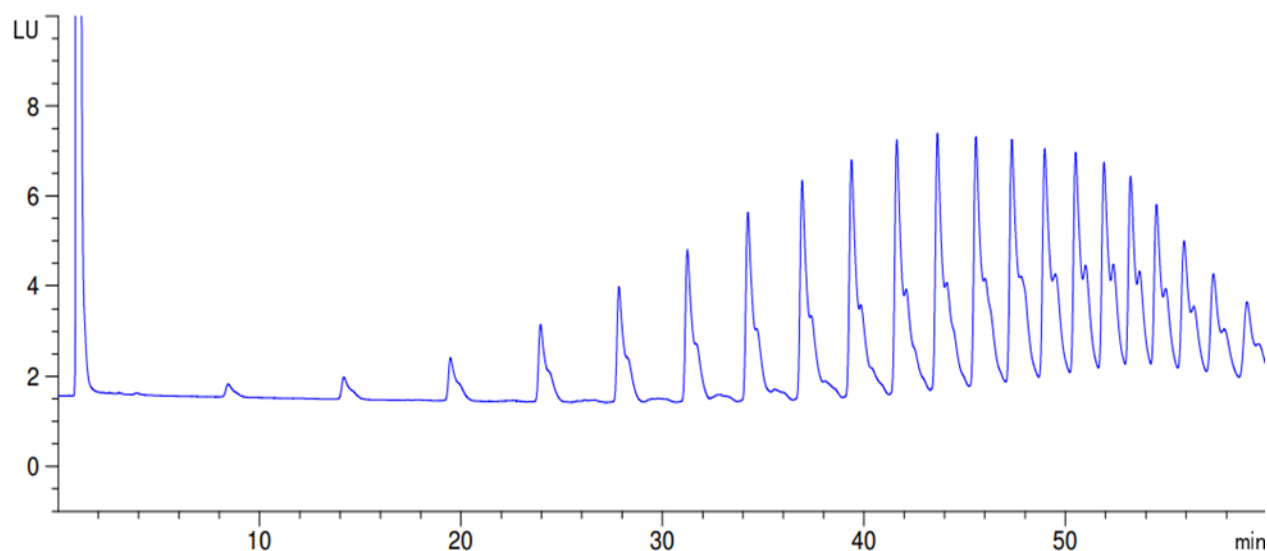
### LC Conditions:

Column: BIOShell™ Glycan HPLC Column (150 mm x 2.1 mm x 2.7 µm) 90 Å or Accucore™ Amide-HILIC (150 mm x 2.1 mm x 2.6 µm).  
Column oven temperature: 40 °C  
Sample temperature: 5 °C  
Flow rate: 0.4 mL/min  
Eluent A: 100 mM Ammonium formate in water  
Eluent B: ACN  
Injection volume: 1 µL (1 µg/mL)  
Fluorescence detector: Ex: 320 nm Em: 420 nm

Gradient:

| Time (min) | A [%] | B [%] |
|------------|-------|-------|
| 0          | 20    | 80    |
| 40         | 50    | 50    |
| 45         | 50    | 50    |

**Figure 1:** A chromatogram showing the fluorescence of dextran ladder with increasing gradient over time.



## References

1. Klapoetke, S., *et al.*, The evaluation of a novel approach for the profiling and identification of N-linked glycan with a procainamide tag by HPLC with fluorescent and mass spectrometric detection. *J Pharm Biomed Anal*, **53 (3)**, 315-24 (2010).
2. HPLC Analysis of a Procainamide-Labeled Dextran Ladder on BIOshell™ Glycan using HILIC-FLR.  
(<https://www.sigmaaldrich.com/IN/en/technical-documents/chromatograms/hplc/hplc-analysis-of-a-procainamide-labeled-dextran-ladder-on-bioshell-glycan-using-hilic-flr/supelco/q006408>)

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