Certificate of Analysis

LudgerPure™ APTS Labelled IgG Glycan Library

Cat. #: CAPTS-IgG-01 Batch #. B242-01 Size: approx. 10 pmol

Description and: Source A mixture of APTS labelled fucosylated bi-antennary complex-type N-glycans (oligosaccharides) released from human IgG antibody glycoprotein. This product consists of purified N-glycans that have been released from human IgG antibody glycoprotein by N-mode hydrazinolysis, labelled with 8-aminopyrene-1,3,6-trisulfonic acid (APTS) and purified to remove free dye.

Form: Dried solid. Product is dried by centrifugal evaporation from an aqueous solution.

Molecular Weight: Various

Storage: Refrigerate (-20°C) both before and after dissolving. This product is stable for at least 5 years as supplied.

Shipping: The product is shipped at ambient temperature.

Handling: Allow the unopened vial to reach ambient temperature and tap unopened on a solid surface to ensure that most of the lyophilized material is at the bottom of the vial. Gently remove the cap, add the desired volume of reconstitution medium, re-cap and mix thoroughly to dissolve all the labelled oligosaccharide into solution. For maximal recovery of oligosaccharide, ensure that the cap lining is also rinsed and centrifuge the vial briefly before use. Ensure that any glass, plasticware or solvents used are free of glycosidases and environmental carbohydrates.

Safety: This product is non-hazardous and has been purified from natural sources certified to be free of all hazardous material including pathogenic biological agents.

For research use only. Not for human or drug use

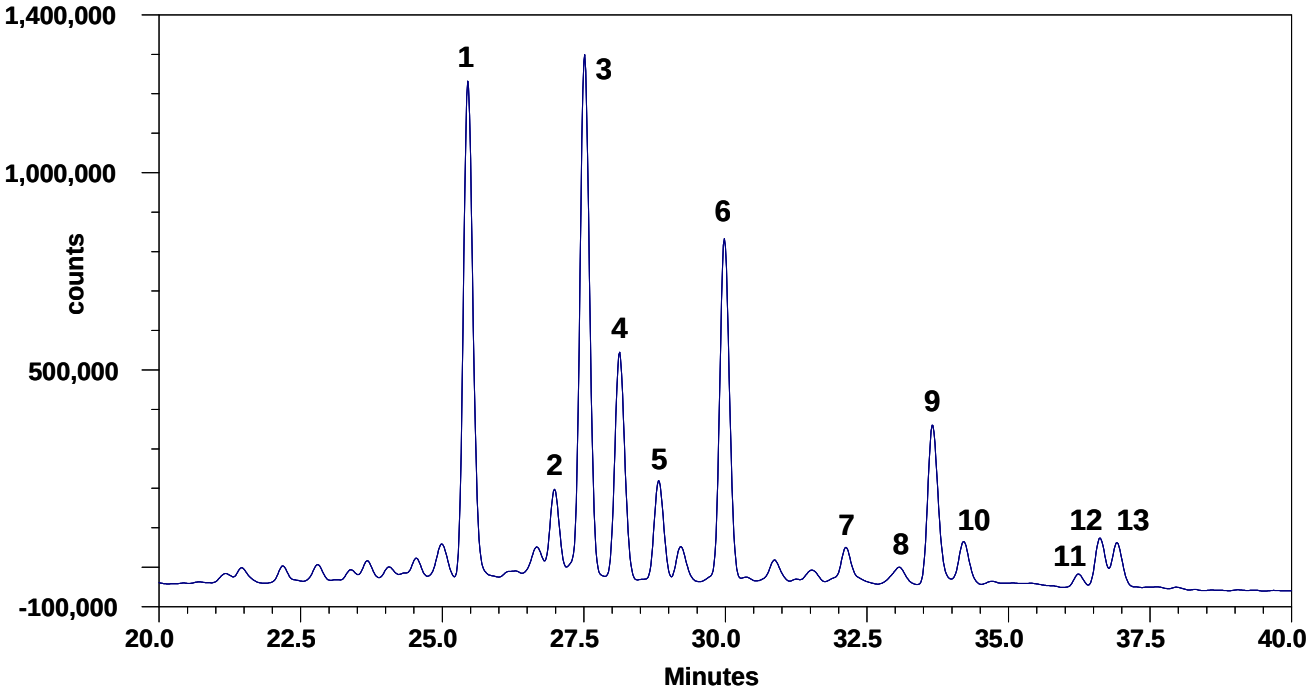


Figure 1: BEH UPLC profile of APTS Labelled IgG N-Glycans released from Human IgG antibody by N-mode hydrazinolysis (**Cat. #: CAPTS-IgG-01**, **Batch #B242-01**). **Table 1 shows peak assignments**

The APTS labelled IgG glycan peaks (figure 1) eluted between 25.0 and 37.5 minutes under the following HPLC conditions:

Column:	Waters BEH UPLC column, 1.7 µM		
Flow:	0.5 ml/min		
Temperature:	60 °C		
Solvent A:	50 mM ammonium formate pH 4.4	Solvent B:	100 % acetonitrile
Gradient:	0 min - 78 % B		
	38.5 min – 55.9 % B		
	40.5 min - 0 % B		
	42.5 min - 0 % B		
	44.5 min - 78 % B		
	55 min - 78 % B		

Detector: Ultimate 3000 Excitation wavelength: 448 nm Emission wavelength: 510 nm

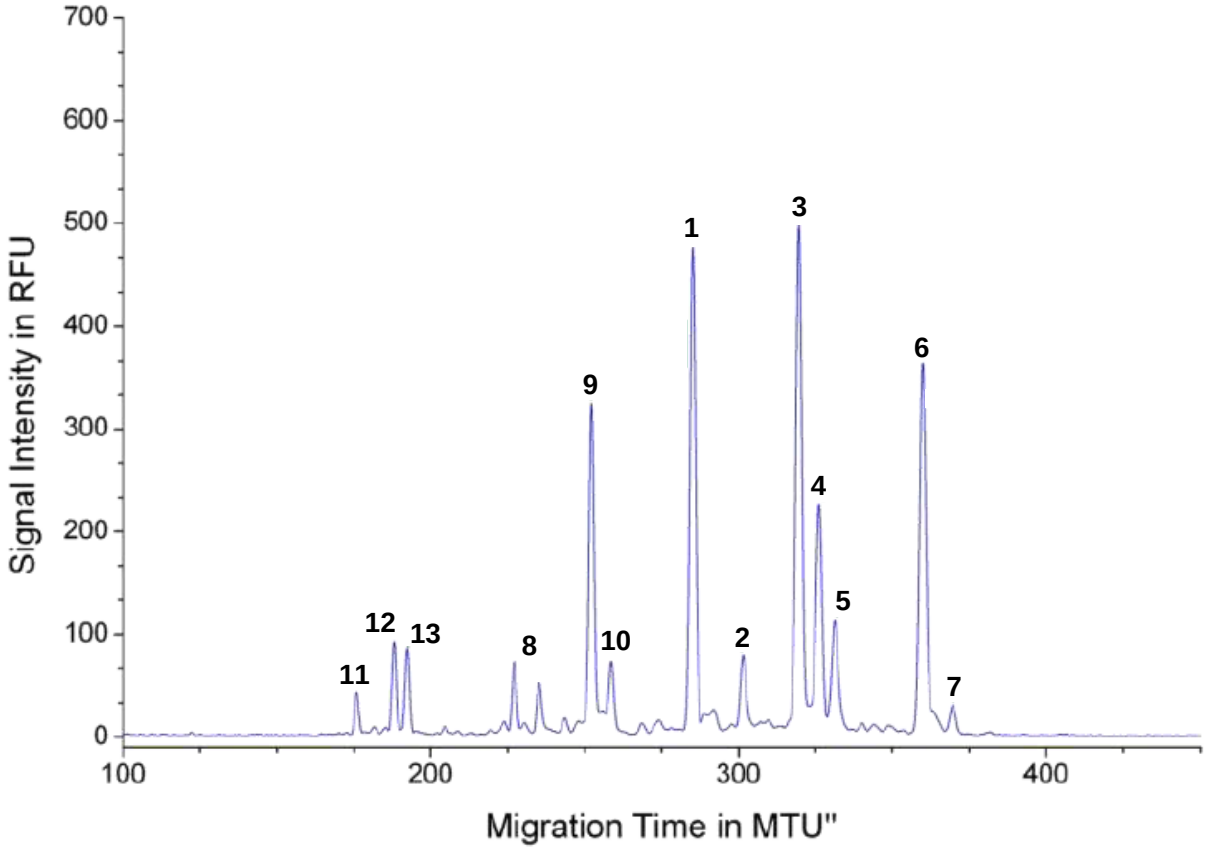


Figure 2: XCGE-LIF profile of APTS Labelled IgG N-Glycans released from Human IgG antibody by N-mode hydrazinolysis (Cat. #: CAPTS-IgG-01, Batch #B242-01). Table 1 shows peak assignments

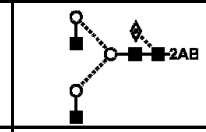
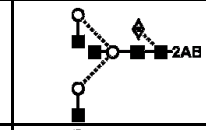
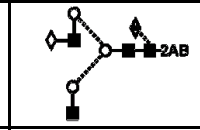
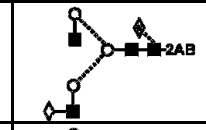
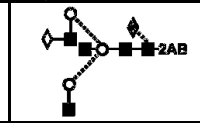
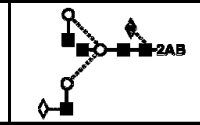
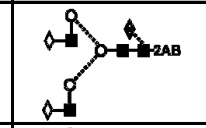
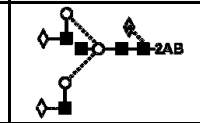
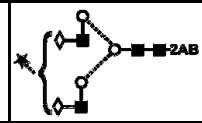
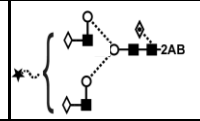
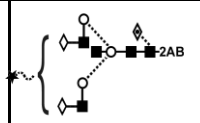
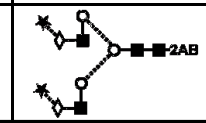
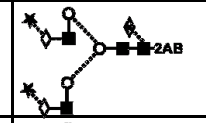
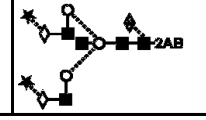
Peak ID	Full name	Short name	Structure	Rel % Area from UPLC
1	F(6)A2	FA2		18.7
2	F(6)A2B	FA2B		3.89
3	F(6)A2[6]G(4)1	FA2G1		20.21
4	F(6)A2[3]G(4)1	FA2G1		9.2
5	F(6)A2[6]BG(4)1	FA2BG1		5.92
	F(6)A2[3]BG(4)1	FA2BG1		
6	F(6)A2G(4)2	FA2G2		13.31
7	F(6)A2BG(4)2	FA2BG2		1.87
8	A2G(4)2S1	A2G2S1		1.31
9	F(6)A2G(4)2S1	FA2G2S1		6.67
10	F(6)A2BG(4)2S1	FA2BG2S1		2.17
11	A2G(4)2S2	A2G2S2		0.62
12	F(6)A2G(4)2S2	FA2G2S2		1.98
13	F(6)A2BG(4)2S2	FA2BG2S2		1.99

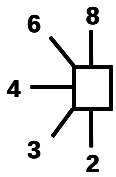
Table 1: Structures and names of each peak from Waters BEH UPLC (Cat. #: CAPTS-IgG-01, Batch #B242-01).

Nomenclature

Symbol for sugar

- Glc
- GlcNAc
- NeuNAc
- Gal
- GalNAc
- Fuc (deoxy galactose)
- Man

Linkage position



Linkage type

- β-linkage
- α-linkage

Structure Abbreviations

All N-glycans have two core GlcNAcs; F at the start of the abbreviation indicates a core fucose, (6) after the F indicates that the fucose is □1-6 linked to the inner GlcNAc; Mx, number (x) of mannose on core GlcNAcs; Ax, number of antenna (GlcNAc) on trimannosyl core; A2, biantennary with both GlcNAcs as □1-2 linked; A3, triantennary with a GlcNAc linked □1-2 to both mannose and the third GlcNAc linked □1-4 to the □1-3 linked mannose; A3', triantennary with a GlcNAc linked □1-2 to both mannose and the third GlcNAc linked □1-6 to the □1-6 linked mannose; A4, GlcNAcs linked as A3 with additional GlcNAc □1-6 linked to □1-6 mannose; B, bisecting GlcNAc linked □1-4 to □1-3 mannose; Gx, number (x) of linked galactose on antenna, (4) or (3) after the G indicates that the Gal is □1-4 or □1-3 linked; [3]G1 and [6]G1 indicates that the galactose is on the antenna of the □1-3 or □1-6 mannose; Sx, number (x) of sialic acids linked to galactose; the numbers 3 or 6 in parentheses after S indicate whether the sialic acid is in an □2-3 or □2-6 linkage.