



CERTIFICATE OF ANALYSIS

PRODUCT NAME: InstantQ™ Human IgG N-Linked Glycan Library

PRODUCT CODE: GKSQ-005

LOT NUMBER: DP16K1501a

PACK SIZE: 100 µl (qualitative standard for glycan identification)

FORM: Aqueous solution

STORAGE: Store at -20°C in the dark. Smaller aliquots (*e.g.* 50 µl) may be stored on the Gly-Q instrument at room temperature for up to 18 hours without significant impact on performance (cap securely and return to -20°C for longer term storage).

EXPIRATION: June 2018

STRUCTURE: The InstantQ Human IgG N-Linked Glycan Library consists of complex biantennary oligosaccharides consistent with N-Glycans on normal human IgG^{1,2,3}. The glycosylamine form of the glycans are labeled with the fluorescent dye, InstantQ.

Quality Control:

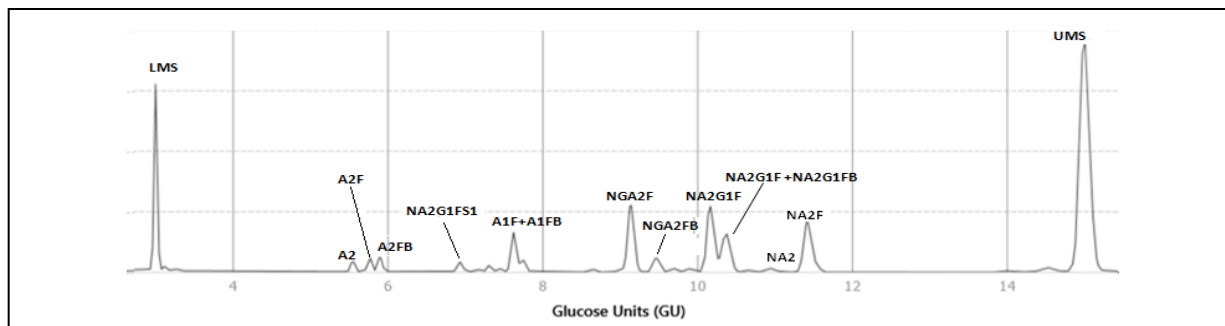



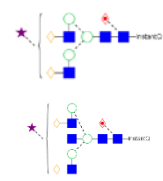
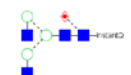
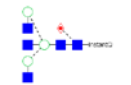
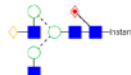
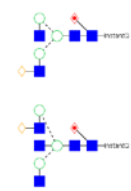

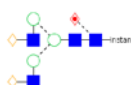
Figure 1 – Gly-Q Results: The InstantQ labeled standard is injected onto a Gly-Q CE Instrument (GQ2000) under the conditions and method below:

METHOD:


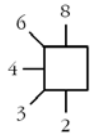




Action	High Voltage	Duration, seconds	Position	Sampling Interval, Seconds
High Voltage Purge	4.00	10.00	Wash	0.04
Pause		2.00	Clean	
Reagent Block Injection	2.00	2.00	MA02	0.04
Pause		2.00	Clean	
Well Plate Injection	2.00	2.00	Sample	0.04
Pause		2.00	Clean	
Separation & Detection	10.00	120.00	Separation	0.04

Table 1 –Peak Identification of InstantQ-(Human IgG N-Linked Library). Gly-Q Migration Standards (GKSQ-500) were co-injected with the library. Peaks are listed in order of appearance on the electropherogram (left to right). Although no sialic acid linkage analysis was performed on this material, linkages are shown as $\alpha(2-6)$ as these are the predominant sialic acid linkage present on human IgG Fc N-glycans⁴.

Glycan Identification	ProZyme	Common	Oxford (New)	Structure ^{5,6}
Lower Migration Standard (LMS), DP3				
Di-sialylated, galactosylated biantennary	A2	G2S2	A2G(4)2S(6)2	
Di-sialylated, galactosylated biantennary, with core fucose	A2F	G2FS2	F(6)A2G(4)2S(6)2	
Di-sialylated, galactosylated biantennary, with core fucose and bisecting GlcNAc	A2FB	G2FS2B	F(6)A2BG(4)2S(6)2	

Glycan Identification	ProZyme	Common	Oxford (New)	Structure ^{5,6}
Mono- α (2-6)-sialylated, mono-galactosylated biantennary, core substituted with fucose	NA2G1FS1	G1F[6]S1	F(6)A2[6]G(4)1S(6)1	
Mono-sialylated, galactosylated biantennary, with core fucose + Mono-sialylated, galactosylated biantennary, with core fucose and bisecting GlcNAc	A1F + A1FB	G2FS1 + G1FS1B	F(6)A2G(4)2S(6)1 + F(6)A2BG(4)2S(6)1	
Asialo-, agalacto- biantennary with core fucose	NGA2F	G0F	F(6)A2	
Asialo-, agalacto- biantennary, with core fucose and bisecting GlcNAc	NGA2FB	G0FB	F(6)A2B	
Asialo-, monogalactosylated biantennary, with core fucose	NA2G1F	G1F[6]	F(6)A2[6]G(4)1	
Asialo-, monogalactosylated biantennary, with core fucose + Asialo-, monogalactosylated biantennary, with core fucose and bisecting GlcNAc	NA2G1F + NA2G1FB	G1F[3] + G1FB[6]	F(6)A2[3]G(4)1 + F(6)A2[6]BG(4)1	
Asialo-, galactosylated biantennary	NA2	G2	A2G(4)2	
Asialo-, galactosylated biantennary, with core fucose	NA2F	G2F	F(6)A2G(4)2	
Upper Migration Standard (UMS), DP15				

Structure Key^{5,6}:

Monosaccharide symbol	Linkage position	Linkage type
 Galactose		— β-linkage
 Mannose		--- α-linkage
 Fucose		
 N-Acetylglucosamine (GlcNAc)		
 N-Acetylneuraminic acid (Neu5Ac or NANA)		

Structural Analysis: The purity and structural integrity of the glycan standard was assessed by capillary electrophoresis (CE).

Application: Qualitative reference standard for the separation and identification of N-glycan structures labeled with InstantQ™ on the Gly-Q CE system.

Handling: The labeled oligosaccharide standard is shipped in solution (100 µl). Allow the unopened vial to reach ambient temperature and centrifuge the vial briefly before use. Aliquot out the desired quantity (see Directions for Use) and return remaining solution to -20°C. The glycan may undergo up to four freeze-thaws without significant effect on performance.

Make sure that any glassware, plasticware, solvents or reagents used are free of glycosidases and carbohydrate contaminants.

Minimize exposure to elevated temperatures or extremes of pH.

Directions For Use: The amount of labeled glycan standard used with the Gly-Q Instrument is typically 50 µl. For our Quality Control testing, 50 µl was transferred to a well of a 96-well PCR plate and replicate runs were processed. Typically, ~30 injections are obtained from a 50 µl sample. Signal decrease can occur over repeated injections from the same aliquot.

For further information on using InstantQ-labeled glycans with the Gly-Q system, please contact ProZyme:

info@prozyme.com

REFERENCES

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6. Harvey DJ, Merry AH, Royle L, Campbell MP, Dwek RA, Rudd PM. Proposal for a standard system for drawing structural diagrams of N- and O-linked carbohydrates and related compounds. *Proteomics* 2009 Aug;9(15):3796-801.

Authorized Signature