

CERTIFICATE OF ANALYSIS

PRODUCT NAME:	AdvanceBio 2-AB Human IgG N-glycan library
PRODUCT CODE:	GKSB-005
LOT NUMBER:	DP22E5035
PACK SIZE:	200 pmol (qualitative chromatographic standard for N-glycan identification)
FORM:	Dry solid
STORAGE:	Store at -20 °C in the dark before and after reconstitution
EXPIRATION:	August 2027, may be used for 1 year after reconstitution
STRUCTURE:	The Human IgG N-Linked Glycan Library consists of complex biantennary oligosaccharides consistent with N-glycans on normal human IgGs ^{1,2,3} (see Table 1). The reducing termini are derivatized with the fluorescent dye, 2-AB (2-aminobenzamide).

Quality Control:

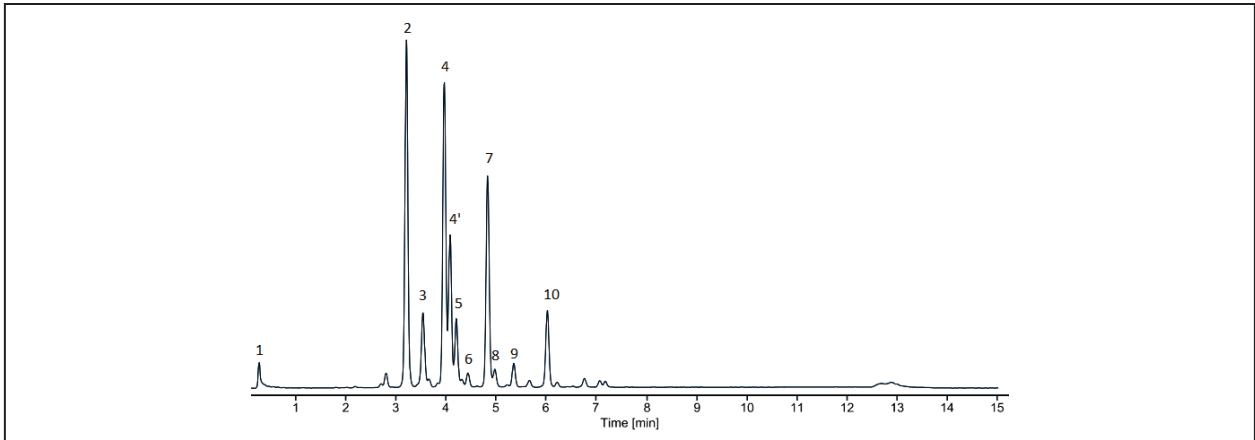


Figure 1 - UHPLC Results: 6–9 pmol (1 μ L, aqueous) of the 2-AB-labeled library was injected on a UHPLC System (Agilent 1290 Infinity II) utilizing a 15-minute method under the conditions below:

Time (min)	Flow (mL/min)	% ACN	% Buffer
00.0	1.0	75.0	25.0
12.0	1.0	52.5	47.5
12.1	0.5	40.0	60.0
12.5	0.5	40.0	60.0
12.6	0.5	75.0	25.0
12.7	1.0	75.0	25.0
15.0	1.0	75.0	25.0

Column: Waters ACQUITY UPLC BEH Glycan Column (1.7 μ m, 2.1 x 100 mm)
ACN: Acetonitrile
Buffer: 100 mM ammonium formate, pH 4.4
Flow rate: As stated in table, in mL/min
Temperature: 60 $^{\circ}$ C
Max Pressure: 15,000 psi
Fluorescence Detection: λ_{ex} = 260 nm, λ_{em} = 430 nm

Table 1 - Peak Identification of 2-AB Labeled Human IgG N-Linked Glycan Library. ¹

Peak Number	Glycan Identification	ProZyme	Common	Oxford (New)	Structure ^{4,5}
1	Free Dye (2-AB)				
2	Asialo-, agalacto- biantennary with core fucose	NGA2F	G0F	F(6)A2	
3	Asialo-, agalacto- biantennary with core fucose and with bisecting N-Acetylglucosamine	NGA2FB	G0FB	F(6)A2B	
4	Asialo-, monogalactosylated biantennary with core fucose	NA2G1F	G1F[6]	F(6)A2[6]G(4)1	
4'	Asialo-, mono-galactosylated biantennary with core fucose	NA2G1F	G1F[3]	F(6)A2[3]G(4)1	

Peak Number	Glycan Identification	ProZyme	Common	Oxford (New)	Structure ^{4,5}
5	Asialo, mono-galactosylated biantennary, core substituted with fucose and bisecting N-Acetylglucosamine	NA2G1FB	G1FB	F(6)A2[6]BG(4)1	
6	Asialo, galactosylated biantennary	NA2	G2	A2G(4)2	
7	Asialo, galactosylated biantennary with core fucose	NA2F	G2F	F(6)A2G(4)2	
8	Asialo, galactosylated biantennary with core fucose and bisecting N-Acetylglucosamine	NA2FB	G2FB	F(6)A2BG(4)2	
9	Mono-α(2-6)-sialylated, mono-galactosylated biantennary with core fucose	NA2G1FS1	G1FS1	F(6)A2[3]G(4)1S(6)1	
10	Mono-α(2-6)-sialylated, galactosylated biantennary with core fucose	A1F	G2FS1	F(6)A2G(4)2S(6)1	

Structure Key^{4,5}:

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

Preparation: Human polyclonal IgG (containing >99% IgGs; IgG1 being at least 70% of the total IgG content, balance is IgG2 and IgG3)^{1,6} was digested with N-Glycanase PLUS (Agilent product code GKE-5010). Released N-linked oligosaccharides were then labeled with 2-AB and purified from excess labeling reagents.

Structural Analysis: The purity and structural integrity of the glycan library was assessed by UHPLC^{7,8} (GU values) and MALDI-TOF mass spectrometry^{9,10} or LC-MS. Good agreement was found between the results from mass spectrometry and UHPLC.

Application: Confirmation of identification of specific N-glycans by UHPLC analysis for samples prepared on the GlykoPrep Sample Preparation Platform.

Handling & Reconstitution: The labeled oligosaccharide is shipped as a dried solid. Use ultra-pure water or an aqueous buffer to dissolve the materials (see Directions for Use for suggested volumes). Allow the unopened vial to reach ambient temperature and tap on a solid surface to ensure that most of the material is at the bottom of the vial. Gently remove the cap, add the desired volume of ultra-pure water or aqueous buffer, re-cap and mix thoroughly to redissolve all the material.

For maximal recovery, ensure that the cap lining is also rinsed. Centrifuge the reconstituted vial briefly before use.

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. Store the reconstituted glycan at -20°C . Allow the vial to equilibrate to ambient temperature before use.

Directions For Use: The amount of 2-AB-labeled library standard injected on a UHPLC column is typically 6–9 pmol of total glycan. For our Quality Control testing, one vial was dissolved in 30 μL of water and 1 μL injected on the ACQUITY column. For larger injection volumes or other LC systems we recommend further dilution as necessary for compatibility with your mobile phase.

REFERENCES

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