

# AdvanceBio Glycan Standards

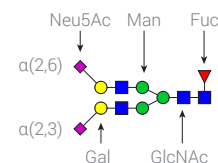
## InstantPC, 2-AB, 2-AA, APTS, InstantAB, Unlabeled

### Glycan standard structures

Glycan	ProZyme name	Oxford name <sup>1</sup>	CFG structure	Unlabeled <sup>2</sup>	InstantPC	InstantAB	2-AB	2-AA	APTS
Complex-type Native N-Glycans									
G0-N	NGA2-N	A1			GKPC-401		GKSB-401		GKSP-401
G0	NGA2	A2		GKC-004300	GKPC-301	GKIB-301	GKSB-301	GKSA-301	GKSP-301
G0F-N	NGA2F-N	F(6)A1			GKPC-402		GKSB-402		GKSP-402
G0F	NGA2F	F(6)A2		GKC-004301	GKPC-302	GKIB-302	GKSB-302	GKSA-302	GKSP-302
G0FB	NGA2FB	F(6)A2B		GKC-004311			GKSB-303		
G1	NA2G1	A2G1		GKC-014300	GKPC-317	GKIB-317	GKSB-317		GKSP-317
G1F	NA2G1F	F(6)A2G1		GKC-014301	GKPC-316	GKIB-316	GKSB-316	GKSA-316	GKSP-316

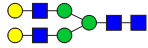

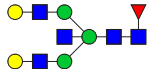
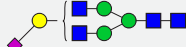




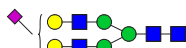

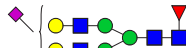

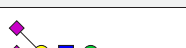

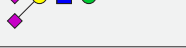
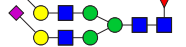
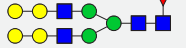
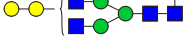
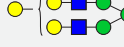
Glycan graphical representations follow the recommendations of the Consortium for Functional Glycomics<sup>3</sup> (CFG) and were drawn using GlycoWorkbench 2.1<sup>4</sup>. Neu5Ac = N-acetylneuraminic acid; Gal = galactose; Man = mannose; GlcNAc = N-acetylglucosamine; Fuc = fucose.

The  $\alpha(2,3)$  sialic acid linkage is found on glycoproteins produced in Chinese hamster ovary (CHO) cells<sup>5</sup>. In contrast, human intravenous immunoglobulin (IVIg) IgG Fc N-glycans are predominantly  $\alpha(2,6)$ -sialylated<sup>6</sup>.



1. Harvey DJ, *et al.* Proposal for a standard system for drawing structural diagrams of N- and O-linked carbohydrates and related compounds. *Proteomics*. 2009, 9(15):3796–801.
2. Not all unlabeled glycans are shown.
3. Varki A, *et al.* Symbol Nomenclature for Graphical Representations of Glycans. *Glycobiology*. 2015 Dec; 25(12): 1323–1324.
4. Ceroni A, *et al.* GlycoWorkbench: a tool for the computer-assisted annotation of mass spectra of glycans. *J Proteome Res*. 2008 Apr;7(4):1650-9.
5. Lee EU, *et al.* Alteration of terminal glycosylation sequences on N-linked oligosaccharides of Chinese hamster ovary cells by expression of beta-galactoside alpha 2,6-sialyltransferase. *J Biol Chem*. 1989, 264(23), 13848-55.
6. Anthony RM, *et al.* Recapitulation of IVIG anti-inflammatory activity with a recombinant IgG Fc. *Science*. 2008, 320(5874), 373-6.

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Glycan	ProZyme name	Oxford name <sup>1</sup>	CFG structure	Unlabeled <sup>2</sup>	InstantPC	InstantAB	2-AB	2-AA	APTS
G2	NA2	A2G(4)2		GKC-024300	GKPC-304	GKIB-304	GKSB-304	GKSA-304	GKSP-304
G2F	NA2F	F(6)A2G(4)2		GKC-024301	GKPC-305	GKIB-305	GKSB-305	GKSA-305	GKSP-305
G2FB	NA2FB	F(6)A2BG(4)2		GKC-024311			GKSB-306		
G1S1 α(2,3)		A2G(4)1S(3)1			GKPC-329				
G1S1 α(2,6)		A2G(4)1S(6)1			GKPC-319				
G1FS1 α(2,3)		FA2G(4)1S(3)1			GKPC-330				
G1FS1 α(2,6)		FA2G(4)1S(6)1			GKPC-320				
G2S1 α(2,3)	A1(α2,3)	A2G(4)2S(3)1			GKPC-321				
G2S1 α(2,6)	A1(α2,6)	A2G(4)2S(6)1		GKC-124300	GKPC-311	GKIB-311	GKSB-311	GKSA-311	GKSP-311
G2FS1 α(2,3)	A1F(α2,3)	F(6)A2G(4)2S(3)1			GKPC-325				
G2FS1 α(2,6)	A1F(α2,6)	F(6)A2G(4)2S(6)1		GKC-124301	GKPC-315	GKIB-315	GKSB-315	GKSA-315	GKSP-315
G2S2 α(2,3)	A2(α2,3)	A2G(4)2S(3)2			GKPC-322				
G2S2 α(2,6)	A2(α2,6)	A2G(4)2S(6)2		GKC-224300	GKPC-312	GKIB-312	GKSB-312	GKSA-312	GKSP-312
G2FS2 α(2,3)	A2F(α2,3)	F(6)A2G(4)2S(3)2			GKPC-323				
G2FS2 α(2,6)	A2F(α2,6)	F(6)A2G(4)2S(6)2		GKC-224301	GKPC-313	GKIB-313	GKSB-313	GKSA-313	GKSP-313
G2F w/2 α-gal	NA2Ga2F	F(6)A2G(4)2Ga(3)2			GKPC-318		GKSB-318		GKSP-318
G1F w/1 α-gal	NA2G 1FGa1	F(6) A2G(4)1Ga(3)1			GKPC-403				
G2F w/1 α-gal	NA2FGa1	F(6)A2G(4)2Ga(3)1			GKPC-404				
A3	NGA3	A3		GKC-005300		GKIB-307	GKSB-307	GKSA-307	

Glycan	ProZyme name	Oxford name <sup>1</sup>	CFG structure	Unlabeled <sup>2</sup>	InstantPC	InstantAB	2-AB	2-AA	APTS
G3	NA3	A3G(4)3		GKC-035300			GKSB-308	GKSA-308	
G3S3 α(2,6)	A3(a2,6)	A3G(4)3S(6)3		GKC-335300			GKSB-314		
A4	NGA4	A4		GKC-006300			GKSB-309	GKSA-309	
G4	NA4	A4G(4)4		GKC-046300			GKSB-310		
<b>High Mannose-type Native N-Glycans</b>									
Man5	MAN-5	M5		GKM-002500	GKPC-103	GKIB-103	GKSB-103	GKSA-103	GKSP-103
Man6	MAN-6	M6		GKM-002600	GKPC-104	GKIB-104	GKSB-104	GKSA-104	GKSP-104
Man7	MAN-7	M7		GKM-002700	GKPC-105	GKIB-105	GKSB-105	GKSA-105	GKSP-105
Man8	MAN-8	M8		GKM-002800	GKPC-106	GKIB-106	GKSB-106	GKSA-106	GKSP-106
Man9	MAN-9	M9		GKM-002900	GKPC-107	GKIB-107	GKSB-107	GKSA-107	GKSP-107
<b>Hybrid-type Native N-Glycan</b>									
Hybrid	HYBR	M5A1B					GKSB-111		
<b>Native N-Glycan Cores</b>									
NF	NF			GKR-001001					
NN	NN			GKR-002000			GKSB-100		
NNF	NNF			GKR-002001					
Man1	MNN	M1		GKR-002100					
Man1F	MNNF	F(6)M1		GKR-002101					
Man3				GKR-002300			GKSB-101		
Man3F				GKR-002301			GKSB-102		

Glycans	Unlabeled	InstantPC	InstantAB	2-AB	2-AA	APTS
<b>N-Glycan Libraries</b>						
Human IgG N-Glycan Library	GKLB-005	GKPC-005	GKIB-005	GKSB-005	GKSA-005	GKSP-005
CHO mAb N-Glycan Library		GKPC-020				
CHO mAb N-Glycan Library plus CHO mAb Glycoprotein		GKPC-020-P				
Human $\alpha$ 1-acid glycoprotein N-Glycan Library	GKLB-001		GKIB-001	GKSB-001	GKSA-001	
Bovine Fetuin N-Glycan Library	GKLB-002		GKIB-002	GKSB-002	GKSA-002	
RNase B N-Glycan Library (High Mannose)			GKIB-009			
Biantennary and High Mannose Partitioned Library			GKIB-520	GKSB-520		GKSP-520
Sialylated Biantennary N-Glycan Library			GKIB-232	GKSB-232		GKSP-232
$\alpha$ (2,6) Sialylated Biantennary N-Glycan Library				GKSB-262		GKSP-262
$\alpha$ (2,3) Sialylated Triantennary N-Glycan Library		GKPC-233	GKIB-233	GKSB-233		GKSP-233
$\alpha$ (2,6) Sialylated Triantennary N-Glycan Library		GKPC-263		GKSB-263		GKSP-263
$\alpha$ (2,3) Sialylated Tetraantennary N-Glycan Library		GKPC-234	GKIB-234	GKSB-234		GKSP-234
$\alpha$ (2,6) Sialylated Tetraantennary N-Glycan Library		GKPC-264		GKSB-264		GKSP-264
<b>Alignment Standards</b>						
Glucose Unit (GU) Ladder		GKPC-503	GKIB-503	GKSB-503	GKSA-503	GKSP-503
Internal Migration Standards for Capillary Electrophoresis (CE)						GKSP-500

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