

N-Glycan Nomenclature

Oxford Notation Name ¹	Short name used with IgG glycans ²	Ludger Product Name ³	Oxford Notation	Consortium for Functional Glycomics (CFG)	Text
M3	Man3	M3N2			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\beta-4} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
M5	Man5	Man5			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\alpha} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
M6	Man6	Man6			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\alpha} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
M7	Man7	Man7			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\alpha} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
M8	Man8	Man8			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\alpha} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
M9	Man9	Man9			$\begin{array}{c} \text{Man}_{\alpha} \\ \diagdown \\ \text{Man}_{\alpha} \\ \diagup \\ \text{Man}_{\alpha} \end{array} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2	G0	NGA2			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2[3]G1	G1	A2G1			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2[6]G1	G1	A2G1			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2G2	G2	NA2			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2G2S1	G2S1	A1			$\text{NeuAc}_{\alpha-6} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A2G2S2	G2S2	A2			$\text{NeuAc}_{\alpha-6} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
FA2	G0F	NGA2F			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
FA2[3]G1	G1F	FA2G1			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
FA2[6]G1	G1F	FA2G1			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
FA2G2	G2F	NA2F			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
FA2G2S1	G2FS1	A1F			$\text{NeuAc}_{\alpha-6} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
FA2G2S2	G2FS2	A2F			$\text{NeuAc}_{\alpha-6} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc} \text{Fuc}_{\alpha-6}$
A3G3S3		A3			$\text{NeuAc}_{\alpha-6} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A3G3		NA3			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A3		NGA3			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A4G4		NA4			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{Gal}_{\beta-4} \text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$
A4		NGA4			$\text{GlcNAc}_{\beta-2} \text{Man}_{\alpha} \text{GlcNAc}_{\beta-4} \text{GlcNAc}$

1- The Oxford notation is based on building up N-glycan structures and it can be used to denote very complex glycans. All N-glycans have two core GlcNAcs; F at the start of the abbreviation indicates a core fucose; Mx, where x-number of mannoses on core GlcNAcs; Ax, where x-number of antenna (GlcNAc) on trimannosyl core; Gx, where x-number of linked galactose on antenna; [3]G1 and [6]G1 indicates that the galactose is on the antenna of the α 1-3 or α 1-6 mannose; Sx, where x-number of sialic acids linked to galactose. Numbers in brackets e.g. F(6)A2G(4)2S(6)2 are used to indicate linkages, where known.

2- This naming system, typically associated with IgG glycans, is primarily for indicating the presence of core fucose, and the number of galactoses that are present on biantennary glycans. This system is also limited in simple structures.

3- Most of the Ludger product names use a nomenclature system that focuses on the number of sialic acid residues present.