

1 **Supplementary Table 1: Recombinant M1 protein, GAS strain 5448 and 5448ΔM1**
2 **glycan binding profile.** Glycan binding was analysed using ProScanArray imaging software,
3 ScanArray Express (PerkinElmer, USA) and the data exported to Microsoft Excel for further
4 analysis. M1 protein binding to a glycan was defined as a value ≥ 1 fold increase above mean
5 background RFU. The mean background was calculated from the average RFU of all empty
6 spots on the array plus three standard deviations. Furthermore, statistical analysis of the data
7 was performed by a Student's *t*-test with a confidence level of 99.99% ($p \leq 0.0001$) and only
8 glycans that met these criteria for three biologically independent samples ($n = 12$ glycans
9 spot replicates) were interpreted as positive binding interactions (highlighted green).

10

ID. No.	Glycan name	Glycan structure	M1	±	5448WT	±	5448Δ M1	±
1A.	Lacto-N-biose I	Galβ1-3GlcNAc	4.47	1.54	0.19	0.07	0.14	0.02
1B.	N-Acetylglucosamine	Galβ1-4GlcNAc	2.19	1.06	6.75	5.84	0.46	0.04
1C.	β1-4galactosyl-galactose	Galβ1-4Gal	1.68	0.39	0.18	0.19	0.08	0.06
1D.	β1-6galactosyl-N-acetylglucosamine	Galβ1-6GlcNAc	2.83	1.48	0.14	0.04	0.08	0.19
1E.	β1-3galactosyl-N-acetylglucosamine	Galβ1-3GalNAc	1.69	0.67	0.22	0.05	0.18	0.01
1F.	Galβ1-3GalNAcβ1-4Galβ1-4Glc		2.46	0.3	2.26	2.02	0.94	0.73
1G.	Lacto-N-tetrose	Galβ1-3GlcNAcβ1-3Galβ1-4Glc	1.88	0.53	5.95	1.97	0.2	0.16
1H.	Lacto-N-neotetrose	Galβ1-4GlcNAcβ1-3Galβ1-4Glc	3.78	2.28	2.23	0.04	1.23	0.08
1I.	Lacto-N-neohexose	Galβ1-4GlcNAcβ1-6(Galβ1-4GlcNAcβ1-3)Galβ1-4Glc	0.53	0.25	0.32	0.02	0.28	0.06
1J.	Lacto-N-hexose	Galβ1-4GlcNAcβ1-6(Galβ1-3GlcNAcβ1-3)Galβ1-4Glc	1.44	0.34	0.61	0.11	0.51	0.13
1K.	Globotriose	Galα1-4Galβ1-4Glc	1.37	0.63	0.37	0.16	0.4	0.33
1L.	Tn Antigen	GalNAcα1-O-Ser	2.38	0.91	0.32	0.15	0.38	0.11
1M.	Galactosyl-Tn Antigen	Galβ1-3GalNAcα1-O-Ser	1.26	0.53	0.32	0.03	0.32	0.07
1N.	α1-3 Galactobiose	Galα1-3Gal	1.42	0.2	0.31	0.12	0.35	0.11
1O.	Linear B-2 Trisaccharide	Galα1-3Galβ1-4GlcNAc	2.02	0.43	0.33	0.05	0.33	0.13
1P.	Linear B-6 Trisaccharide	Galα1-3Galβ1-4Glc	2.61	0.95	1.65	2.04	0.45	0.06
2A.	α1-3, β1-4, α1-3 Galactotetrose	Galα1-3Galβ1-4Galα1-3Gal	1.05	0.39	0.46	0.1	0.47	0.17
2B.	β1-6Galactobiose	Galβ1-6Gal	1.64	0.52	4.79	1.59	0.26	0.16
2C.	Terminal disaccharide of globotriose	GalNAcβ1-3Gal	1.31	0.2	0.69	0.46	0.88	0.22
2D.	Receptor for pili of <i>P. aeruginosa</i>	GalNAcβ1-4Gal	1.81	0.75	0.3	0.25	0.39	0.27
2E.	P1 Antigen	Galα1-4Galβ1-4GlcNAc	1.53	0.11	0.31	0.13	0.25	0.14
2F.	α-D-N-acetylgalactosaminyl-1-3Gal-β1-4Glc	GalNAcα1-3Galβ1-4Glc	2.15	1.61	1.63	1.19	0.5	0.09
2G.	iso-Lacto-N-octose	Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ1-6(Galβ1-3GlcNAcβ1-3)Galβ1-4Glc	4.57	0.58	0.49	0.14	0.38	0.11
4A.	<i>N,N'</i> -Diacetyl chitobiose	GlcNAcβ1-4GlcNAc	1.27	0.22	2	0.66	0.29	0.23

4B.	<i>N,N',N''</i> -Triacetyl chitotriose	GlcNAcβ1-4GlcNAcβ1-4GlcNAc	1.16	0.36	0.64	0.43	0.32	0.37
4C.	<i>N,N',N'',N'''</i> - Tetraacetyl chitotetrose	GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1- 4GlcNAc	1.34	0.33	0.5	0.15	0.54	0.18
4D.	<i>N,N',N'',N''',N''''</i> , -Hexaacetyl chitohehexose	GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1- 4GlcNAcβ1-4GlcNAcβ1-4GlcNAc	1.42	0.19	0.33	0.25	0.44	0.15
4E.	Bacterial cell wall muramyl disaccharide	GlcNAcβ1-4MurNAc	1.64	1.18	0.29	0.03	0.29	0.03
5A.	β1-2- <i>N</i> - Acetylglucosamine- mannose	GlcNAcβ1-2Man	2.07	1.08	0.22	0.05	0.18	0.04
5B.	Biantennary <i>N</i> - linked core pentasaccharide	GlcNAcβ1-2Manα1-6(GlcNAcβ1- 2Manα1-3)Man	2.27	0.76	0.44	0.08	0.44	0.18
5C.	α1-2-Mannobiose	Manα1-2Man	1.5	0.56	0.15	0.06	0.1	0.05
5D.	α1-3-Mannobiose	Manα1-3Man	1.06	1.02	0.77	0.18	0.55	0.56
5E.	α1-4-Mannobiose	Manα1-4Man	1.3	0.09	0.18	0.16	0.07	0.12
5F.	α1-6-Mannobiose	Manα1-6Man	0.76	0.21	0.34	0.09	0.39	0.06
5G.	α1-3, α1-6- Mannobiose	Manα1-6(Manα1-3)Man	1.99	1.12	0.3	0.05	0.28	0.22
5H.	α1-3, α1-3, α1-6- Mannopentaose	Manα1-6(Manα1-3)Manα1-6(Manα1- 3)Man	1.74	0.62	0.13	0	0.11	0.11
7A.	Lacto- <i>N</i> -fucopentose I	Fuca1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glc	2.64	0.83	2.24	1.78	0.14	0.28
7B.	Lacto- <i>N</i> -fucopentose II	Galβ1-3(Fuca1-4)GlcNAcβ1-3Galβ1- 4Glc	1.37	0.2	0.22	0.1	0.15	0.01
7C.	Lacto- <i>N</i> -fucopentose III	Galβ1-4(Fuca1-3)GlcNAcβ1-3Galβ1- 4Glc	1.42	0.99	0.2	0.06	0.19	0.25
7D.	Lacto- <i>N</i> - difucohexose I	Fuca1-2Galβ1-3(Fuca1-4)GlcNAcβ1- 3Galβ1-4Glc	0.76	0.53	0.37	0.45	0.11	0.01
7E.	Lacto- <i>N</i> - difucohexose II	Galβ1-3(Fuca1-4)GlcNAcβ1-3Galβ1- 4(Fuca1-3)Glc	2.18	0.18	0.32	0.14	0.33	0.36
7F.	H-disaccharide	Fuca1-2Gal	1.51	0.63	0.47	0.2	0.35	0.04
7G.	2'-Fucosyllactose	Fuca1-2Galβ1-4Glc	1.79	1.4	0.1	0.18	0.01	0.09
7H.	3'-Fucosyllactose	Galβ1-4(Fuca1-3)Glc	1.46	0.26	3.02	1.09	-0.36	0.2
7I.	Lewis ^x	Galβ1-4(Fuca1-3)GlcNAc	2.78	1.21	1.81	0.6	1.82	1.66
7J.	Lewis ^a	Galβ1-3(Fuca1-4)GlcNAc	1.39	0.34	0.26	0.05	0.28	0.01
7K.	Blood Group A- trisaccharide	GalNAcα1-3(Fuca1-2)Gal	1.07	0.37	2.29	0.05	1.88	0.16
7L.	Lactodifucotetrose	Fuca1-2Galβ1-4(Fuca1-3)Glc	1.31	1.36	6.49	2.15	0.11	0.15
7M.	Blood Group B- Trisaccharide	Galβ1-3(Fuca1-2)Gal	1.32	0.29	2.3	0.18	1.34	0.3
7N.	Lewis ^y	Fuca1-2Galβ1-4(Fuca1-3)GlcNAc	2.66	1.05	0.35	0.27	0.13	0.34
7O.	Blood Group H Type II Trisaccharide	Fuca1-2Galβ1-3GlcNAc	1.79	0.52	1.35	0.45	1.37	1.22
7P.	Lewisb tetrasaccharide	Fuca1-2Galβ1-3(Fuca1-4)GlcNAc	1.32	0.32	0.39	0.04	0.39	0.01
8A.	Sulpho Lewis ^a	SO ₃ -3Galβ1-3(Fuca1-4)GlcNAc	1.11	0.15	0.15	0.07	0.11	0.04
8B.	Sulpho Lewis ^x	SO ₃ -3Galβ1-4(Fuca1-3)GlcNAc	1.28	0.12	0.27	0.03	0.27	0.19
8C.	Monofucosyl-para- Lacto- <i>N</i> -hexose IV	Galβ1-3GlcNAcβ1-3Galβ1-4(Fuca1- 3)GlcNAcβ1-3Galβ1-4Glc	1.11	0.37	0.48	0.32	0.64	0.04
8D.	Monofucosyllacto- <i>N</i> - hexose III	Galβ1-4(Fuca1-3)GlcNAcβ1-6(Galβ1- 3GlcNAcβ1-3)Galβ1-4Glc	-0.04	0.48	0.38	0.2	0.5	0.15
8E.	Difucosyllacto- <i>N</i> - hexose	Galβ1-4(Fuca1-3)GlcNAcβ1-6(Fuca1- 2Galβ1-3GlcNAcβ1-3)Galβ1-4Glc	4.62	0.34	0.67	0	0.66	0.09
8F.	Trifucosyllacto- <i>N</i> - hexose	Galβ1-4(Fuca1-3)GlcNAcβ1-6(Fuca1- 2Galβ1-3(Fuca1-4)GlcNAcβ1-3)Galβ1- 4Glc	1.49	0.38	1.66	1.99	0.47	0.18
10A.	Sialyl Lewis ^a	Neu5Aca2-3Galβ1-3(Fuca1-4)GlcNAc	3.83	2.11	1.3	0.18	1.13	0.16
10B.	Sialyl Lewis ^x	Neu5Aca2-3Galβ1-4(Fuca1-3)GlcNAc	0.64	0.11	0.06	0.26	-0.11	0.13
10C.	Sialyllacto- <i>N</i> -tetrose a	Neu5Aca2-3Galβ1-3GlcNAcβ1-3Galβ1- 4Glc	3.09	1.4	0.4	0.12	0.46	0.08

10D.	Monosialyl, monofucosyllacto- <i>N</i> -neohexose	Galβ1-4(Fuca1-3)GlcNAcβ1-6(Neu5Acα2-6Galβ1-4GlcNAcβ1-3)Galβ1-4Glc	2.09	1	1.57	0.51	1.65	0.92
10E		Neu5Acα2-3Galβ1-3(Neu5Acα2-6)GalNAc	2.12	0.57	1.13	0.03	0.77	0.24
10K.	2,3'-Sialyllactosamine	Neu5Acα2-3Galβ1-4GlcNAc	3.23	0.75	0.7	0.46	0.87	0.35
10L.	2,6'-Sialyllactosamine	Neu5Acα2-6Galβ1-4GlcNAc	4.86	3.04	1.93	1.47	2.74	0.4
10M	LS-Tetrasaccharide a		3.35	1.04	3.22	1.94	4	1.18
10N.	LS-Tetrasaccharide b	Galβ1-3(Neu5Acα2-6)GlcNAcβ1-3Galβ1-4Glc	6.09	2.69	1.74	1.18	2.3	0.25
10O.	LS-Tetrasaccharide c	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-4Glc	2.63	0.58	0.57	0.49	0.75	0.45
10P.	Disialyllacto- <i>N</i> -tetraose	Neu5Acα2-3Galβ1-3(Neu5Acα2-6)GlcNAcβ1-3Galβ1-4Glc	4.79	2.62	1.69	1.43	2.47	0.28
11A.	2,3'-Sialyllactose	Neu5Acα2-3Galβ1-4Glc	2.81	0.8	2.08	1.57	2.91	0.18
11B.	2,6'-Sialyllactose	Neu5Acα2-6Galβ1-4Glc	2.29	0.95	2.9	2.27	4.03	0.23
11C.	Colominic acid	(Neu5Acα2-8Neu5Ac) _n (n<50)	3.47	1.85	1.92	1.27	2.48	0.53
11D.	Biantennary 2,6-sialylated- <i>N</i> -glycan-Asn	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Asn	2.32	0.82	0.41	0.17	0.31	0.07
12A.	Neocarratetrose-41, 3-di- <i>O</i> -sulphate (Na ⁺)	C ₂₄ H ₃₆ O ₂₅ S ₂ Na ₂ (Mixed anomers. Tetrasaccharide of regular κ-carrageenan)	1.96	0.87	2.4	1.94	3.37	0.19
12B.	Neocarratetrose-41- <i>O</i> -sulphate (Na ⁺)	C ₂₄ H ₃₇ O ₂₂ SNa (Mixed anomers. Derived from C1003 by removal of the non-reducing terminal 4-sulphate)	1.32	0.74	1.03	0.34	1.03	1
12C.	Neocarrahexose-24,41, 3, 5-tetra- <i>O</i> -sulphate (Na ⁺)	C ₃₆ H ₅₂ O ₄₀ S ₄ Na ₄ (Mixed anomers. A hybrid sequence comprising carrageenan disaccharides in the order k-i-k, derived from the carrageenan from <i>Chondrus crispus</i>)	2.09	1.16	1.85	1.4	2.56	0.08
12D.	Neocarrahexose-41, 3, 5-tri- <i>O</i> -sulphate (Na ⁺)	C ₃₆ H ₅₃ O ₃₇ S ₃ Na ₃ (Mixed anomers. Hexasaccharide of regular κ-carrageenan)	3.42	1.65	1.67	1.27	2.39	0.45
12E.	Neocarraoctose-41, 3, 5, 7-tetra- <i>O</i> -sulphate (Na ⁺)	C ₄₈ H ₇₀ O ₄₉ S ₄ Na ₄ (Mixed anomers. Octasaccharide of regular κ-carrageenan)	1.81	1.65	1.88	1.42	2.69	0.56
12F.	Neocarradecose-41, 3, 5, 7, 9-penta- <i>O</i> -sulphate (Na ⁺)	C ₆₀ H ₈₇ O ₆₁ S ₅ Na ₅ (Mixed anomers. Decasaccharide of regular κ-carrageenan)	1.74	0.55	0.42	0.02	0.4	0.13
12G.	ΔUA-2S GlcNS-6S Na ₄ (I-S)	C ₁₂ H ₁₅ NO ₁₉ S ₃ Na ₄ (Predominant disaccharide produced from heparin by heparinase I and II)	1.43	0.64	2.04	1.57	2.79	0.3
12H.	ΔUA-GlcNS-6S Na ₃ (II-S)	C ₁₂ H ₁₆ NO ₁₆ S ₂ Na ₃ (Produced from heparinase II digestion of heparin and heparin sulphate)	1.27	0.22	1.58	1.2	2.07	0.77
12I.	ΔUA-2S-GlcNS Na ₃ (III-S)	C ₁₂ H ₁₆ NO ₁₆ S ₂ Na ₃ (Produced from heparin by digestion with heparinase I and II)	4.77	4.02	1.89	1.11	2.54	0.66
12J.	ΔUA-2S-GlcNAc-6S Na ₃ (I-A)	C ₁₄ H ₁₈ NO ₁₇ S ₂ Na ₃ (Minor component produced from heparin by heparinase II)	3.06	0.81	1.14	0.05	1.1	0.2
12K.	ΔUA-GlcNAc-6S Na ₂ (II-A)	C ₁₄ H ₁₉ NO ₁₄ SNa ₂ (Product of the action of heparinases II and III on heparin and heparan sulphate)	2.26	1.32	2.21	1.33	2.84	0.22
12L.	ΔUA-2S-GlcNAc Na ₂ (III-A)	C ₁₄ H ₁₉ NO ₁₄ SNa ₂ (Minor product of the action of heparinase II on heparin)	3.54	1.18	1.63	1.09	2.12	0.4
12M	ΔUA-GlcNAc Na (IV-A)	C ₁₄ H ₂₀ NO ₁₁ Na (Produced from heparin sulphate by digestion With heparinase III)	1.39	0.5	2.18	1.59	3.02	0.23
12N.	ΔUA-GalNAc-4S Na ₂ (Δ Di-4S)	C ₁₄ H ₁₉ NO ₁₄ SNa ₂ (Produced from various chondroitin sulphates By the action of chondroitinases ABC, B and AC-1)	1.54	0.59	0.61	0.37	0.73	0.43
12O.	ΔUA-GalNAc-6S Na ₂ (Δ Di-6S)	C ₁₄ H ₁₉ NO ₁₄ SNa ₂ (Produced from various chondroitin sulphates By the action of chondroitinases ABC, AC-1 and C)	3.62	2.3	2.28	1.8	3.09	0.77
12P.	ΔUA-GalNAc-4S,6S Na ₃ (Δ Di-disE)	C ₁₄ H ₁₈ NO ₁₇ S ₂ Na ₃ (Produced from various chondroitin sulphates By the action of chondroitinases ABC, B and AC-1)	5.37	5.55	2.08	1.35	2.64	0.77
13A.	ΔUA-2S-GalNAc-4S Na ₂ (Δ Di-disB)	C ₁₄ H ₁₈ NO ₁₇ S ₂ Na ₃ (Produced from various chondroitin sulphates by action of	9.67	3.3	2.15	0.96	0.84	0.2

		chondroitinase ABC and/or B. Most typically from chondroitin sulphate B (dermatan sulphate)						
13B.	Δ UA-2S-GalNAc-6S Na ₃ (Δ Di-disD)	C ₁₄ H ₁₈ NO ₁₇ S ₂ Na ₃ (Produced from various chondroitin sulphates by the action of chondroitinase ABC)	2.23	1.33	1.21	0.4	1.25	0.95
13C.	Δ UA-2S-GalNAc-4S-6S Na ₄ (Δ Di-tisS)	C ₁₄ H ₁₇ NO ₂₀ S ₃ Na ₄ (Produced as a minor component by the action of chondroitinase ABC on various chondroitin sulphates, particularly B)	3.54	1.55	1.93	0.21	1.63	0.74
13D.	Δ UA-2S-GalNAc-6S Na ₂ (Δ Di-UA2S)	C ₁₄ H ₁₉ NO ₁₄ SNa ₂ (Produced as a minor component from various chondroitin sulphates by the action of chondroitinase ABC)	1.47	0.39	2.06	0.66	2.11	1.25
13E.	Δ UA-GlcNAc Na (Δ Di-HA)	C ₁₄ H ₂₀ NO ₁₁ Na (The only unsaturated disaccharide produced from hyaluronic acid by the action of chondroitinase ABC or AC-1)	2.25	0.94	2.38	1.97	3.19	1.35
13F.	Hyaluronan fragments (4mer)	(GlcA β 1-3GlcNAc β 1-4)n (n=4)	2.55	1.25	0.74	0.44	0.87	0.59
13G.	Hyaluronan fragments (8mer)	(GlcA β 1-3GlcNAc β 1-4)n (n=8)	5.62	2.57	0.59	0.22	0.67	0.15
13H.	Hyaluronan fragments (10mer)	(GlcA β 1-3GlcNAc β 1-4)n (n=10)	2.4	0.63	1.43	0.08	1.23	0.69
13I.	Hyaluronan fragments (12mer)	(GlcA β 1-3GlcNAc β 1-4)n (n=12)	2.22	1.17	0.61	0.02	0.57	0.07
13J.	Heparin	(GlcA/IdoA α / β 1-4GlcNAc α 1-4)n (n=200)	1.5	0.79	1.88	1.28	2.43	0.58
13K.	Chondroitin sulfate	(GlcA/IdoA β 1-3(\pm 4/6S)GalNAc β 1-4)n (n<250)	2.1	1.18	2.11	1.71	2.96	0.21
13L.	Dermatan sulfate	((\pm 2S)GlcA/IdoA α / β 1-3(\pm 4S)GalNAc β 1-4)n (n<250)	1.62	0.61	1.88	1.21	2.56	0.49
13M.	Chondroitin 6-Sulfate	(GlcA/IdoA β 1-3(\pm 6S)GalNAc β 1-4)n (n<250)	2.12	0.07	1.45	0.98	1.75	1.27
13N.	HA-4 (10mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=4)	3.31	1.59	2.35	0.98	2.74	0.44
13O.	HA-6 (10mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=6)	5.93	5.11	2.01	0.62	2.19	0.61
13P.	HA-8 (9.7mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=8)	2.66	1.27	0.54	0.24	0.64	0.08
14A.	HA-10 (7.83mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=10)	4.26	1.89	2.11	0.7	0.41	0.44
14B.	HA-12 (6.5mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=12)	3.99	0.91	1.24	0	1.08	0.74
14C.	HA-14 (5.6mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=14)	3.27	0.74	0.64	0.39	0.77	0.46
14D.	HA-16 (4.9mM)	(GlcA β 1-3GlcNAc β 1-4)n (n=16)	3.73	0.79	2.05	1.63	2.92	0.21
14E.	HA-30,000da 2.5mg/ml	(GlcA β 1-3GlcNAc β 1-4)n	1.54	0.63	1.73	1.31	2.37	0.22
14F.	HA-107,000da 2.5mg/ml	(GlcA β 1-3GlcNAc β 1-4)n	0.82	0.1	1.78	1.28	2.37	0.46
14G.	HA-190,000da 2.5mg/ml	(GlcA β 1-3GlcNAc β 1-4)n	1.78	1.3	2.86	2.13	3.92	0.21
14H.	HA-220,000da 2.5mg/ml	(GlcA β 1-3GlcNAc β 1-4)n	0.63	0.56	1.45	1.01	1.74	1.41
14I.	HA-1,600,000da 2.5mg/ml	(GlcA β 1-3GlcNAc β 1-4)n	1.02	0.74	0.49	0.04	0.48	0.13
14J.	Heparin Sulfate 5mg/ml	(GlcA/IdoA α /IdoA β 1-4GlcNAc/GlcNS/GlcNAc6S α 1-4)n	1.98	1.39	0.52	0.32	0.64	0.29
14K.	Beta-1-3Glucan	(Glc β 1-3Glc β 1-3)n	1.12	0.32	0.33	0.26	0.44	0.14
1	L- α -Fuc	Fuc α -sp3	0.27	0.14	0.5	0.15	0.55	0.14
2	α -Gal	Gal α -sp3	1.6	1.08	0.33	0.04	0.29	0.32
3	β -Gal	Gal β -sp3	0.89	0.2	0.36	0.15	0.42	0.04
4	TnSer	GalNAc α -sp0	0.29	0.13	0.71	0.31	0.79	0.46
5	T _n	GalNAc α -sp3	0.72	0.13	2.96	0.98	2.97	2.73
6	β -GalNAc	GalNAc β -sp3	0.54	0.22	0.06	0.18	-0.03	0.09
7	α -Glc	Glc α -sp3	0.55	0.27	0.14	0.04	0.07	0.57
9	β -Glc	Glc β -sp3	0.54	0.19	0.43	0.04	0.38	0.37
10	β -GlcNAc	GlcNAc β -sp3	0.79	0.26	0.38	0.17	0.45	0.06
14	β -GlcN(Gc)	GlcN(Gc) β -sp4	0.65	0.13	0.47	0.17	0.55	0.06

15	aminoglucitol	HOCH ₂ (HOCH) ₄ CH ₂ NH ₂	0.39	0.12	0.47	0.02	0.43	0.2
16	α -Man	Man α -sp3	1.45	0.3	0.55	0.44	0.75	0.16
18	β -Man	Man β -sp4	1.25	0.9	0.55	0.19	0.56	0.49
19	β -ManAc	ManNAc β -sp4	2.37	1.09	0.11	0.11	0.07	0.14
20	L- α -Rha	Rha α -sp3	1.5	0.39	0.42	0.17	0.48	0.11
22	β -GlcNAc	GlcNAc β -sp4	0.08	0.32	0.63	0.29	0.5	0.39
37	3-O-Su- β -Gal	3-O-Su-Gal β -sp3	0.65	0.3	0.43	0.02	0.47	0.41
38	3-O-Su- β -GalNac	3-O-Su-GalNAc α -sp3	0.47	0.26	0.24	0.08	0.24	0.25
43	6-O-Su- β -GlcNAc	6-O-Su-GlcNAc β -sp3	0.19	0.34	0.66	0.34	0.89	0.41
44	α -glucuronic acid	GlcA α -sp3	0.42	0.45	0.23	0.21	0.33	0.06
45	β -glucuronic acid	GlcA β -sp3	0.41	0.55	0.52	0.19	0.57	0.19
46	β -Glc6P	6-H ₂ PO ₃ Glc β -sp4	0.85	0.2	0.42	0.4	0.59	0.29
47	α -Man6P	6-H ₂ PO ₃ Man α -sp3	0.6	0.17	0.03	0.13	-0.05	0.02
48	α -Neu5Ac	Neu5Ac α -sp3	0.41	0.24	0.34	0.3	0.45	0.29
49	α -Neu5AcBn	Neu5Ac α -sp9	0.12	0.14	0.3	0.1	0.35	0.05
52	α -Neu5Gc	Neu5Gc α -sp3	1.13	0.78	0.09	0.02	0.09	0.07
54	9-Nac- α -Neu5Ac	9-Nac-Neu5Ac α -sp3	0.61	0.13	0.51	0.1	0.5	0.32
55	3-O-Su- β -GlcNAc	3-O-Su-GlcNAc β -sp3	1.05	0.5	1.03	0.34	1.06	0.77
71	H _{di}	Fuc α 1-2Gal β -sp3	1.07	0.59	0.51	0.04	0.46	0.1
72		Fuc α 1-3GlcNAc β -sp3	0.76	0.21	0.38	0.13	0.43	0.02
73	Le	Fuc α 1-4GlcNAc β -sp3	0.69	0.83	0.11	0.05	0.06	0.16
75		Gal α 1-2Gal β -sp3	0.56	0.32	0.08	0.08	0.1	0.15
76	B _{di}	Gal α 1-3Gal β -sp3	1.06	0.53	0.59	0.39	0.38	0.17
77	T _{$\alpha\beta$}	Gal α 1-3GalNAc β -sp3	0.86	0.59	0.52	0.05	0.37	0.65
78	T _{$\alpha\alpha$}	Gal α 1-3GalNAc α -sp3	1.46	0.82	0.78	0.07	0.64	0.42
80		Gal α 1-3GlcNAc β -sp3	0.52	0.1	0.28	0.01	0.24	0.2
81	α -LacNAc	Gal α 1-4GlcNAc β -sp3	1.95	0.48	1.82	0.31	0.18	0.25
83	Melibiose	Gal α 1-6Glc β -sp4	1.64	1	0.32	0.15	0.37	0.1
84		Gal β 1-2Gal β -sp3	1.74	0.33	0.54	0.08	0.56	0.04
85	Le ^c	Gal β 1-3GlcNAc β -sp3	3.99	1.24	0.11	0.34	-0.07	0.07
87		Gal β 1-3Gal β -sp3	0.72	0.39	0.14	0.19	0.01	0.15
88	T _{$\beta\beta$}	Gal β 1-3GalNAc β -sp3	0.88	0.4	0.59	0.2	0.68	0.04
89	TF	Gal β 1-3GalNAc α -sp3	0.69	0.65	0.4	0.15	0.48	0.05
93	Lac	Gal β 1-4Glc β -sp4	4.04	0.73	0.23	0.5	-0.02	0.27
94		Gal β 1-4Gal β -sp4	3.3	1.01	0.23	0.23	0.17	0.47
97	LacNAc	Gal β 1-4GlcNAc β -sp3	2.18	1.24	0.6	0.25	0.69	0.22
100		Gal β 1-6Gal β -sp4	1.35	0.29	0.15	0.03	0.11	0.31
101	Fs-2	GalNAc α 1-3GalNAc β -sp3	1.02	0.76	0.18	0.15	0.27	0.11
102	A _{di}	GalNAc α 1-3Gal β -sp3	1.49	1.23	0.11	0.13	0	0.24
103	core 5	GalNAc α 1-3GalNAc α -sp3	2.43	1.15	0.38	0.16	0.52	0.45
104		GalNAc β 1-3Gal β -sp3	0.59	0.26	0.49	0.27	0.57	0.32
106	LacdiNAc	GalNAc β 1-4GlcNAc β -sp3	1.46	1.63	0.54	0.2	0.7	0.45
110	maltose	Glc α 1-4Glc β -sp3	1.48	0.57	0.54	0.02	0.47	0.24
111	cellobiose	Glc β 1-4Glc β -sp4	0.37	0.04	1.69	0.97	1.9	1.71
112	gentiobiose	Glc β 1-6Glc β -sp4	0.72	0.3	0.16	0.08	0.22	0.13
113	core 3	GlcNAc β 1-3GalNAc α -sp3	1.16	0.99	0.45	0.12	0.5	0.02

114		GlcNAc β 1-3Man β -sp4	2.84	0.31	0.42	0.02	0.44	0.09
115	chitobiose-Asn	GlcNAc β 1-4GlcNAc β -Asn	1.7	0.86	0.65	0.46	0.89	0.06
117	chitobiose	GlcNAc β 1-4GlcNAc β -sp4	0.59	0.98	0.25	0.03	0.23	0.14
118	core 6	GlcNAc β 1-6GalNAc α -sp3	1.01	0.67	1.19	0.03	1.27	0.85
119		Man α 1-2Man β -sp4	0.52	0.34	1.44	0.97	2.07	0.92
120		Man α 1-3Man β -sp4	1.37	0.21	1.38	1.31	2.15	0.6
121		Man α 1-4Man β -sp4	3.23	3.19	1.53	1.24	2.22	0.37
122		Man α 1-6Man β -sp4	-0.14	1.58	1.7	1.23	2.33	0.08
123		Man β 1-4GlcNAc β -sp4	0.15	0.19	1.05	0.86	1.64	0.96
124		Man α 1-2Man α -sp4	3.41	3.82	0.29	0.03	0.28	0.13
145	6-O-Su-Le ^c	Gal β 1-3(6-O-Su)GlcNAc β -sp3	1.61	1.07	0.63	0.46	0.95	0.6
146	6-O-Su-Lac	Gal β 1-4(6-O-Su)Glc β -sp2	0.9	0.02	0.84	0.13	0.8	0.39
147	6-O-Su-LacNAc	Gal β 1-4(6-O-Su)GlcNAc β -sp3	0.7	1.43	1.48	1.09	2.17	0.83
149	6-O-Su-chitobiose	GlcNAc β 1-4(6-O-Su)GlcNAc β -sp2	1.45	0.51	2.03	1.5	2.92	0.82
150	3`-O-Su-TF	3-O-Su-Gal β 1-3GalNAc α -sp3	0.78	0.11	2.27	1.18	2.82	0.21
151	6`-O-Su-TF	6-O-Su-Gal β 1-3GalNAc α -sp3	2.61	2.33	1.14	0.38	1.42	0.77
152	SM3	3-O-Su-Gal β 1-4Glc β -sp2	1.59	0.76	1.27	0.78	1.69	0.19
153	6`-O-Su-Lac	6-O-Su-Gal β 1-4Glc β -sp2	2.69	2.77	1.68	1.19	2.07	1.37
155	3`-O-Su-Le ^c	3-O-Su-Gal β 1-3GlcNAc β -sp3	1.07	0.64	0.18	0.15	0.12	0.17
157	3`-O-Su-LacNAc	3-O-Su-Gal β 1-4GlcNAc β -sp3	-1.2	3.14	2.13	1.05	2.67	0.24
159	4`-O-Su-LacNAc	4-O-Su-Gal β 1-4GlcNAc β -sp3	0.27	1.03	0.57	0.56	0.25	0.07
161	6`-O-Su-Le ^c	6-O-Su-Gal β 1-3GlcNAc β -sp3	1.52	1.37	2.12	1.65	2.95	0.13
163	6`-O-Su-LacNAc	6-O-Su-Gal β 1-4GlcNAc β -sp3	0.98	0.75	1.22	0.6	1.73	1.37
164		GlcA β 1-3GlcNAc β -sp3	-0.32	0.07	1.94	1.47	2.63	0.38
165		GlcA β 1-3Gal β -sp3	0.39	0.51	2.05	1.49	2.8	0.12
166		GlcA β 1-6Gal β -sp3	2.7	1.84	1.86	1.6	2.71	0.16
167	GlcNAc-Mur	GlcNAc β 1-4-[HOOC(CH ₃)CH]-3-O-GlcNAc β -sp4	-0.44	1.52	1.02	0.69	1.29	0.46
168	GMDP-Lys	GlcNAc β 1--[HOOC(CH ₃)CH]-3-O-GlcNAc β -L-alanyl-D-i-glutaminy-L-lysine	-1.07	2.17	2.21	1.65	2.99	0.39
169	GM4	Neu5Ac α 2-3Gal β -sp3	1.71	1.27	1.39	0.57	1.84	1.17
170		Neu5Ac α 2-6Gal β -sp3	0.15	0.51	1.37	0.99	1.96	0.52
171	3-SiaT _n	Neu5Ac α 2-3GalNAc α -sp3	-0.03	0.31	0.22	0.07	0.17	0.03
172	SiaT _n	Neu5Ac α 2-6GalNAc α -sp3	0.27	0.56	1.11	0.81	1.61	0.57
174	NeuGc-T _n	Neu5Gc α 2-6GalNAc α -sp3	-0.44	0.57	1.76	1.47	2.45	0.4
176	3`,6-di-O-Su-Lac	3-O-Su-Gal β 1-4(6-O-Su)Glc β -sp2	1.97	0.71	1.96	1.48	2.65	0.46
177	3`,6-di-O-Su-LacNAc	3-O-Su-Gal β 1-4(6-O-Su)GlcNAc β -sp2	0.27	0.93	1.86	1.19	2.48	0.18
178	6,6`-di-O-Su-Lac	6-O-Su-Gal β 1-4(6-O-Su)Glc β -sp2	1.46	1.56	1.83	0.99	2.36	0.31
179	6,6`-di-O-Su-Le ^c	6-O-Su-Gal β 1-3(6-O-Su)GlcNAc β -sp2	1.14	0.35	1.37	0.59	1.82	1.1
180	6,6`-di-O-Su-LacNAc	6-O-Su-Gal β 1-4(6-O-Su)GlcNAc β -sp2	0.77	0.69	1.86	1.4	2.62	0.27
181	3`,4`-di-O-Su-LacNAc	3,4-O-Su ₂ -Gal β 1-4GlcNAc β -sp3	0.12	0.14	1.5	1.13	2.14	0.38
182	3`,6`-di-O-Su-LacNAc	3,6-O-Su ₂ -Gal β 1-4GlcNAc β -sp2	-0.41	1.93	2.08	1.56	2.87	0.09
183	4`,6`-di-O-Su-LacNAc	4,6-O-Su ₂ -Gal β 1-4GlcNAc β -sp2	0.2	0.43	3.55	2.67	4.66	1.62
184	4`,6`-di-O-Su-LacNAc	4,6-O-Su ₂ -Gal β 1-4GlcNAc β -sp3	2.34	1.52	1.88	1.48	2.54	0.68
186	(Sia) ₂	Neu5Ac α 2-8Neu5Ac α 2-sp3	1.9	2.25	2.16	1.65	2.99	0.11
189	3`,6,6`-tri-O-Su-	3,6-O-Su ₂ -Gal β 1-4(6-O-Su)GlcNAc β -sp2	1.23	0.47	1.39	1.04	1.99	0.49

	LacNAc							
192	6-O-Su-LacdiNAc	GalNAc β 1-4(6-O-Su)GlcNAc β -sp3	0.84	0.13	2.31	1.51	3.12	0.36
193	3`-O-Su-LacdiNAc	3-O-Su-GalNAc β 1-4GlcNAc β -sp3	2.01	1.64	1.43	0.98	1.94	0.12
194	6`-O-Su-LacdiNAc	6-O-Su-GalNAc β 1-4GlcNAc β -sp3	0.46	0.32	0.9	0.84	1.37	0.2
195	6`-Su-3-O-Ac-LacdiNAc	6-O-Su-GalNAc β 1-4-(3-O-Su)GlcNAc β -sp3	-0.67	1.96	2.57	2.02	3.45	1.03
196	3,3`-O-Su ₂ -LacdiNAc	3-O-Su-GalNAc β 1-4(3-O-Su)-GlcNAc β -sp3	0.78	0.98	0.71	0.43	0.9	0.12
197	3`,6`-Su ₂ -LacdiNAc	3,6-O-Su ₂ -GalNAc β 1-4GlcNAc β -sp3	3.16	2.94	2.17	1.55	2.85	0.68
198	4`,6`-Su ₂ -LacdiNAc	4,6-O-Su ₂ -GalNAc β 1-4GlcNAc β -sp3	2.11	0.45	1.73	1.35	2.35	0.45
199	4`,6`-Su ₂ -3-O-Ac-LacdiNAc	4,6-O-Su ₂ -GalNAc β 1-4-(3-O-Ac)GlcNAc β -sp3	1.36	0.75	0.91	0.2	1.1	0.76
200	4`-O-Su-LacdiNAc	4-O-Su-GalNAc β 1-4GlcNAc β -sp3	0.61	0.41	1.82	1.33	2.68	1.23
201	3`,4`-Su ₂ -LacdiNAc	3,4-O-Su ₂ -Gal β 1-4GlcNAc β -sp3	3.75	4.6	1.6	1.14	2.24	0.38
202	6,6`-O-Su-LacdiNAc	6-O-Su-GalNAc β 1-4(6-O-Su)GlcNAc β -sp3	0.81	0.2	0.45	0.3	0.64	0.25
203	6-O-Su-LacNAc	Gal β 1-4(6-O-Su)GlcNAc β -sp2	2.62	1.89	1.7	1.14	2.26	0.11
204	4`-O-Su-LacdiNAc	4-O-Su-GalNAc β 1-4GlcNAc β -sp2	0.8	0.64	0.69	0.47	0.96	0.2
205		Neu5Ac α 2-6GalNAc β -sp3	-4.15	7.76	0.6	0.4	0.83	0.12
206	NeuGca3Gal	Neu5Gca2-3Gal-sp3	0.61	0.68	2.21	1.76	3.08	0.23
215	Le ^a H (type 1)	Fuca1-2Gal β 1-3GlcNAc β -sp3	1.36	0.28	1.17	0.99	0.58	0.03
216	H (type 2)	Fuca1-2Gal β 1-4GlcNAc β -sp3	1.97	0.62	2.07	1.76	2.99	0.1
217	H (type 3)	Fuca1-2Gal β 1-3GalNAca-sp3	-0.02	0.78	0.61	0.28	0.49	0.35
219	H (type 6)	Fuca1-2Gal β 1-4Glc β -sp4	3.08	2.94	0.41	0.01	0.61	0.71
220		Gal α 1-3Gal β 1-4Glc β -sp2	0.17	0.59	1.15	0.6	1.27	1.14
222	Galili (tri)	Gal α 1-3Gal β 1-4GlcNAc β -sp3	0.6	1.11	0.18	0.08	0.23	0.05
224	P ^k , Gb3, GbOse ₃	Gal α 1-4Gal β 1-4Glc β -sp3	2.37	4.03	1.88	1.63	2.54	1.17
225	P ₁	Gal α 1-4Gal β 1-4GlcNAc-sp2	0.33	0.17	2.01	1.43	2.89	0.99
226	B _{tri}	Gal α 1-3(Fuca1-2)Gal β -sp3	1.34	0.43	1.99	1.4	2.75	0.32
228		Gal β 1-2Gal α 1-4GlcNAc β -sp4	3.13	1.65	2.09	1.61	2.97	0.36
229		Gal β 1-3Gal β 1-4GlcNAc β -sp4	1.88	1.3	2	1.69	2.92	0.34
231		Gal β 1-4GlcNAc β 1-3GalNAca-sp3	0.51	0.22	2.16	1.17	2.79	1.08
232		Gal β 1-4GlcNAc β 1-6GalNAca-sp3	0.59	0.34	2.4	1.77	3.36	0.4
233	Le ^a	Gal β 1-3(Fuca1-4)GlcNAc β -sp3	3.19	1.88	2.93	2.21	4.05	0.15
234	Le ^x	Gal β 1-4(Fuca1-3)GlcNAc β -sp3	1.34	0.49	4.19	3.06	6.15	2.58
235	A _{tri}	GalNAca1-3(Fuca1-2)Gal β -sp3	1.28	0.07	2.07	1.29	2.75	0.29
238	GA ₂ , GgOse ₃	GalNAc β 1-4Gal β 1-4Glc β -sp3	2.46	0.7	1.97	1.52	2.74	0.1
240	maltotriose	(Glc α 1-4) ₃ β -sp4	0.53	0.36	1.3	0.77	1.77	0.56
241	isomaltotriose	(Glc α 1-6) ₃ β -sp4	0.67	0.24	1.66	1.39	2.5	0.77
246		GlcNAc β 1-2Gal β 1-3GalNAca-sp3	1.15	0.17	2.47	2.11	3.54	0.16
247		GlcNAc β 1-3Gal β 1-3GalNAca-sp3	1.34	0.16	2.16	1.8	3.14	0.31
248		GlcNAc β 1-3Gal β 1-4Glc β -sp2	0.77	0.31	2.12	1.73	3.11	0.64
250		GlcNAc β 1-3Gal β 1-4GlcNAc β -sp3	0.83	0.12	2.77	2.26	4.02	0.58
251		GlcNAc β 1-4Gal β 1-4GlcNAc β -sp2	0.89	1.01	2.44	1.62	3.29	0.26
252	chitotriose	GlcNAc β 1-4GlcNAc β 1-4GlcNAc β -sp4	0.36	0.63	1.94	1.51	2.84	0.78
253		GlcNAc β 1-6Gal β 1-4GlcNAc β -sp2	0.96	0.53	2.39	1.78	3.46	1.03
254	core 2	GlcNAc β 1-6(Gal β 1-3)GalNAca-sp3	1.09	0.25	2.55	1.91	3.55	0.17
255	core 4	GlcNAc β 1-6(GlcNAc β 1-3)GalNAca-sp3	1.31	0.38	2.1	1.28	2.74	0.09
258	Man ₃	Man α 1-6 (Man α 1-3)Man β -sp4	1.37	0.5	2.48	2.59	3.94	0.7

262	T _{ββ} -Gal	Galβ1-3GalNAcβ1-3Gal-sp4	2.03	0.73	2.09	1.59	3.01	0.68
264		Galβ1-4Galβ1-4GlcNAc-sp3	2.95	0.9	2.05	1.05	2.58	0.12
287	Su-Le ^a	Fuca1-4(3-O-Su-Galβ1-3)GlcNAcβ-sp3	0.54	0.31	1.5	0.85	2.09	1.09
288	Su-Le ^x	3-O-Su-Galβ1-4(Fuca1-3)GlcNAcβ-sp3	1.27	0.57	2.17	1.88	3.17	0.21
289	6-SiaTF	Neu5Aca2-6(Galα1-3)GalNAcα-sp3	0.02	0.49	1.85	1.3	2.56	0.32
290		Neu5Aca2-6(Galβ1-3)GalNAcα-sp3	0.47	0.49	0.04	0.08	0.02	0.04
292	3`-Sia-TF	Neu5Aca2-3Galβ1-3GalNAcα-sp3	0.64	1.24	2.53	1.71	3.37	0.2
293	3`SL	Neu5Aca2-3Galβ1-4Glcβ-sp3	2.49	1.33	2.43	2.18	3.62	0.4
294	3`SL	Neu5Aca2-3Galβ1-4Glcβ-sp4	0.64	0.08	3.18	2.64	4.51	0.2
295	6`SL	Neu5Aca2-6Galβ1-4Glcβ-sp2	2.29	0.94	2.09	0.9	2.51	0.08
298	3`SLN	Neu5Aca2-3Galβ1-4GlcNAcβ-sp3	0	0.2	1.67	1.17	2.26	0.07
299	3`-SiaLe ^c	Neu5Aca2-3Galβ1-3GlcNAcβ-sp3	0.43	0.53	1.89	1.54	2.74	0.42
300	6`SLN	Neu5Aca2-6Galβ1-4GlcNAcβ-sp3	1.11	0.41	2.19	1.8	3.12	0.11
303	3`SLN (Gc)	Neu5Gca2-3Galβ1-4GlcNAcβ-sp3	0.88	0.56	1.85	1.42	2.6	0.17
304	6`SLN (Gc)	Neu5Gca2-6Galβ1-4GlcNAcβ-sp3	1.33	0.62	2.02	1.25	2.71	0.46
306		9-Nac-Neu5Aca2-6Galβ1-4GlcNAcβ-sp3	0.39	0.14	3.98	3.17	6.1	3.22
315	6-Su-3`SLN	Neu5Aca2-3Galβ1-4-(6-O-Su)GlcNAcβ-sp3	0.77	0.04	2.79	2.27	4.02	0.41
317	6-Su-3`SiaTF	Neu5Aca2-3Galβ1-3-(6-O-Su)GalNAcβ-sp3	1.03	0.12	2.49	1.22	3.19	0.76
318	6-Su-6`SLN	Neu5Aca2-6Galβ1-4-(6-O-Su)GlcNAcβ-sp3	0.23	0.44	2.07	1.64	3.04	0.88
319	6`-Su-3`SLN	Neu5Aca2-3-(6-O-Su)Galβ1-4GlcNAcβ-sp3	0.97	0.1	2.55	1.89	3.46	0.37
321	(Sia) ₃	(Neu5Aca2-8) ₃ -sp3	1.02	0.3	3.16	2.59	4.45	0.31
323	6`-SiaLe ^c	Neu5Aca2-6Galβ1-3GlcNAc-sp3	0.64	0.62	0.6	0.31	0.82	0.48
324	6Su-6`-SiaLe ^c	Neu5Aca2-6Galβ1-3(6-O-Su)GlcNAc-sp3	1.71	0.72	1.16	0.53	1.34	0.51
331	3`SiaLe ^c (Gc)	Neu5Gca2-3Galβ1-3GlcNAcβ-sp3	0.71	0.19	1.65	0.29	1.86	0.69
359	B (type 1)	Galα1-3(Fuca1-2)Galβ1-3GlcNAcβ-sp3	0.02	1.03	4.42	3.46	5.7	3.21
360	B (type 2)	Galα1-3(Fuca1-2)Galβ1-4GlcNAcβ-sp3	4.32	1.82	3.51	2.67	4.82	0.41
362	B (type 3)	Galα1-3(Fuca1-2)Galβ1-3GalNAcα-sp3	0.71	0.14	1.96	1.24	2.69	0.7
363	B (type 4)	Galα1-3(Fuca1-2)Galβ1-3GalNAcβ-sp3	2.52	2.02	1.84	1.37	2.07	0.57
364	αGalLe ^s	Galα1-3Galβ1-4(Fuca1-3)GlcNAcβ-sp3	2.68	1.42	1.75	1.42	2.58	0.71
366	A (type 1)	GalNAca1-3(Fuca1-2)Galβ1-3GlcNAcβ-sp3	1.5	0.03	1.8	0.26	1.65	0.18
368	A (type 2)	GalNAca1-3(Fuca1-2)Galβ1-4GlcNAcβ-sp3	1.24	0.77	5.94	4.31	7.32	5.24
371	Le ^b	Fuca1-4(Fuca1-2Galβ1-3)GlcNAcβ-sp3	1.32	0.36	1.61	1.28	2.38	0.75
372	Le ^y	Fuca1-2Galβ1-4(Fuca1-3)GlcNAcβ-sp3	1.12	0.71	1.99	1.13	2.67	0.77
373	Galili (tetra)	Galα1-3Galβ1-4GlcNAcβ1-3Galβ-sp3	0.91	0.98	3.68	1.81	4.7	0.95
375		Galα1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	5.94	1.92	3.55	2.92	5.49	2.87
376	LNT	Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-sp4	1.58	0.63	1.28	1.02	0.51	0.69
377		Galβ1-3GlcNAcβ1-3Galβ1-3GlcNAcβ-sp2	0.36	0.58	2.43	2	3.68	1.42
378		Galβ1-3GlcNAcα1-3Galβ1-4GlcNAcβ-sp3	0.53	0.26	2.74	2.09	3.86	0.33
379		Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	1.34	0.56	2.9	2.3	4.26	1.19
380		Galβ1-3GlcNAcα1-6Galβ1-4GlcNAcβ-sp2	1.97	0.57	2.55	0.74	3.01	0.89
381		Galβ1-3GlcNAcβ1-6Galβ1-4GlcNAcβ-sp2	0.8	0.21	2	0.77	2.56	1.33
382	Asialo-GM1	Galβ1-3GalNAcβ1-4Galβ1-4Glcβ-sp3	2.24	1.07	0.25	0.1	0.34	0.29
383	LNnT	Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-sp2	3.67	3.03	1.56	1.02	2	0.51

385	i	Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	5.37	1.35	1.68	1.03	2.17	0.17
387		Galβ1-4GlcNAcβ1-6Galβ1-4GlcNAcβ-sp2	1.55	1.28	1.41	1.07	1.94	0.14
388		Galβ1-4GlcNAcβ1-6(Galβ1-3)GalNAcα-sp3	3.67	1.11	1.16	0.38	1.21	0.78
389	Gb4, P	GalNAcβ1-3GalαGalβ1-4Glcβ-sp3	0.16	0.13	0.17	0.1	0.2	0.14
390	maltotetraose	(Glcα1-4) ₄ β-sp4	5.25	1.29	0.21	0.01	0.18	0.07
391	isomaltotetraose	(Glcα1-6) ₄ β-sp4	3.54	0.73	0.15	0.3	0.3	0.11
392	A (type 3)	GalNAcα1-6(Fuca1-2)Galβ1-3GalNAcα-sp3	1.34	0.26	2.29	0.07	1.26	0.15
395	Tk	GlcNAcβ1-6(GlcNAcβ1-3)Galβ1-4GlcNAcβ-sp3	5.5	3.84	1.13	0.38	1.3	0.04
401	Le ^c 3Le ^c	Galβ1-3GlcNAcβ1-3Galβ1-3GlcNAcβ-sp3	0.97	0.2	1.34	0.99	1.78	0.39
419		3-O-SuGalβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	0.41	0.26	2.33	1.69	3.06	0.88
420		4-O-SuGalβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	1.77	0.63	1.01	0.33	1.1	0.42
421	GM2	GalNAcβ1-4(Neu5Aca2-3)Galβ1-4Glcβ-sp2	1.2	0.88	0.45	0.05	0.43	0.17
422		Neu5Aca2-3Galβ1-4GlcNAcβ1-3Galβ-sp3	4.86	2.65	0.26	0.06	0.18	0.22
423	SiaLe ^s	Neu5Aca2-3Galβ1-4(Fuca1-3)GlcNAcβ-sp3	1.02	1.35	0.24	0.07	0.27	0.02
426	SiaLe ^a	Neu5Aca2-3(Fuca1-4)GlcNAcβ-sp3	2.44	2.46	2.06	1.62	2.75	0.88
428		Neu5Aca2-3Galβ1-4(Fuca1-3)6-O-Su-GlcNAcβ-sp3	1.37	1.23	2.19	1.54	2.75	1.38
429		Neu5Aca2-3(6-O-Su)Galβ1-4(Fuca1-3)GlcNAcβ-sp3	0.61	0.28	1.92	1.49	2.61	0.42
433	Sia ₂ -TF	Neu5Aca2-6(Neu5Aca2-3Galβ1-3)GalNAcα-sp3	2.2	1.25	1.46	0.64	1.77	0.08
434	GD3	Neu5Aca2-8Neu5Aca2-3Galβ1-4Glcβ-sp4	1.82	0.59	3.84	2.01	4.52	1.94
479	LNFP-1	Fuca1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-sp4	1.11	0.16	5.45	4.59	7.01	5.14
480	H (type1) penta	Fuca1-2Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ-sp2	1.31	2.03	2.05	0.07	0.09	0.02
481	Galili (penta)	Galα1-3Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-sp4	1.29	0.67	0.49	0.03	0.43	0.16
483	Ble ^y	Galα1-3(Galβ1-4)Fuca1-2(Fuca1-3)GlcNAcβ-sp3	-0.24	0.7	0.59	0.6	0.21	0.17
488		Galβ1-4GlcNAcβ1-6(Galβ1-4GlcNAcβ1-3)GalNAcα-sp3	0.68	0.63	0.45	0.1	0.59	0.67
489		Galβ1-4GlcNAcβ1-3(GlcNAcβ1-6)Galβ1-4GlcNAc-sp2	0.72	0.87	3.76	3.06	5.13	1.31
490		Galβ1-4GlcNAcβ1-6(GlcNAcβ1-3)Galβ1-4GlcNAcβ-sp2	0.19	0.4	1.4	0.28	1.53	0.14
492	isomaltopentaose	(Glcα1-6) ₅ β-sp4	4.74	1.33	1.94	1.45	2.58	0.66
493	chitopentaose	(GlcNAcβ1-4) ₅ β-sp4	4.03	3.46	0.58	0.68	0.19	0.06
495	Man5	Manα1-6(Manα1-6)Manα1-3(Manα1-3)Manβ-sp4	8.73	2.44	0.53	0.17	0.6	0.03
496	Le ^b -Lac	Fuca1-2Galβ1-3(Fuca1-4)GlcNAcβ1-3Galβ1-4Glcβ-sp4	2	2.88	0.13	0.21	0.21	0.18
497	Le ^y -Lac	Fuca1-2Galβ1-4(Fuca1-3)GlcNAcβ1-3Galβ1-4Glcβ-sp4	1.05	0.91	0.79	0.3	0.81	0.72
498	(LN) ₃	(Galβ1-4GlcNAcβ1-3) ₃ -sp3	1.69	0.36	1.82	1.36	2.44	0.49
499	I	Galβ1-4GlcNAcβ1-6(Galβ1-4GlcNAcβ1-3)Galβ1-4GlcNAc-sp2	1.05	0.63	1.57	1.14	1.97	1.17
501	Gb5	Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-sp4	4.2	2.57	2.06	1.71	2.95	0.11
502	maltohexaose	(Glcα1-6) ₆ β-sp4	5.78	2.3	0.64	0.2	0.71	0.11
503	chitohexaose	(GlcNAcβ1-4) ₆ β-sp4	1.31	1.61	0.42	0.08	0.37	0.06
504	9-OS	(A-GN-M) ₂ -3,6-M-GN-GNβ-sp4	1.36	1.98	1.2	1.01	1.55	1.14
505	7-OS	(GN-M) ₂ -3,6-M-GN-GNβ-sp4	0.53	0.52	2.32	1.7	3.38	1.24
527	3 ^c SLN-LacNAc	Neu5Aca2-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp2	3.56	5.54	0.33	0.02	0.33	0.1
528	SiaLe ^s -3Gal	Neu5Aca2-3 Galβ1-4(Fuca1-	1.13	1.73	2.38	1.34	0.14	0.1

		3)GlcNAcβ1-3Galβ-sp3						
529	LSTb	Neu5Acα2-6(Galβ1-3)GlcNAcβ1-3Galβ1-4Glcβ-sp4	1.01	0.16	1.66	1.34	2.18	1.05
531	GD2	Neu5Acα2-8Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glc-sp2	1.82	0.57	1.43	0.96	1.84	0.51
532	GT3	Neu5Acα2-8Neu5Acα2-8Neu5Acα2-3Galβ1-4Glc-sp2	2.97	1.76	2.21	1.6	2.94	0.51
533	GT2	(Neu5Acα2-8) ₂ Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glc-sp2	2.28	1.28	1.06	0.02	0.98	0.33
534	6'SLN-LacNAc	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-sp3	0.6	0.37	0.46	0.2	0.49	0.4
536	LSTa	Neu5Acα2-3Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-sp4	0.45	0.13	1.05	0.17	1.04	0.48
537	LSTd	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-sp4	2.29	0.75	0.67	0.08	0.62	0.46
538	MFLNH III	Le ^x 1-6'(Le ^c 1-3')Lac-sp4	4.59	1.19	0.61	0.19	0.45	0.16
539	MFLNH I	LacNAc1-6'(Le ^d 1-3')Lac-sp4	3.05	1.92	1.77	1.36	2.4	0.43
540	MSMFLNnH	Le ^x 1-6'(6'SLN1-3')Lac-sp4	3.41	1.41	1.51	1.19	2.07	0.38
541	DFLNH (a)	Le ^x 1-6'(Le ^d 1-3')Lac-sp4	4.63	2.01	0.21	0.22	0.31	0.04
542	MF(1-3)iLNO	Le ^c Le ^x 1-6'(Le ^c 1-3')Lac-sp4	6.14	4.24	1.22	0.28	1.33	0.04
543	TFLNH	Le ^x 1-6'(Le ^b 1-3')Lac-sp4	3.19	2.39	0.32	0.01	0.32	0.07
625	hyaluroninc acid	(GlcAβ1-4GlcNAcβ1-3) ₈ -NH ₂ -ol	2.46	3.62	0.37	0.11	0.26	0.21
627	11-OS, YDS	(Sia2-6A-GN-M) ₂ -3,6-M-GN-GNβ-sp4	2.4	3.25	0.3	0.27	0.14	0.01

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