The fucose-binding lectin from opportunistic pathogen *Burkholderia ambifaria* binds to both plant and human oligosaccharidic epitopes

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Supporting information for publication

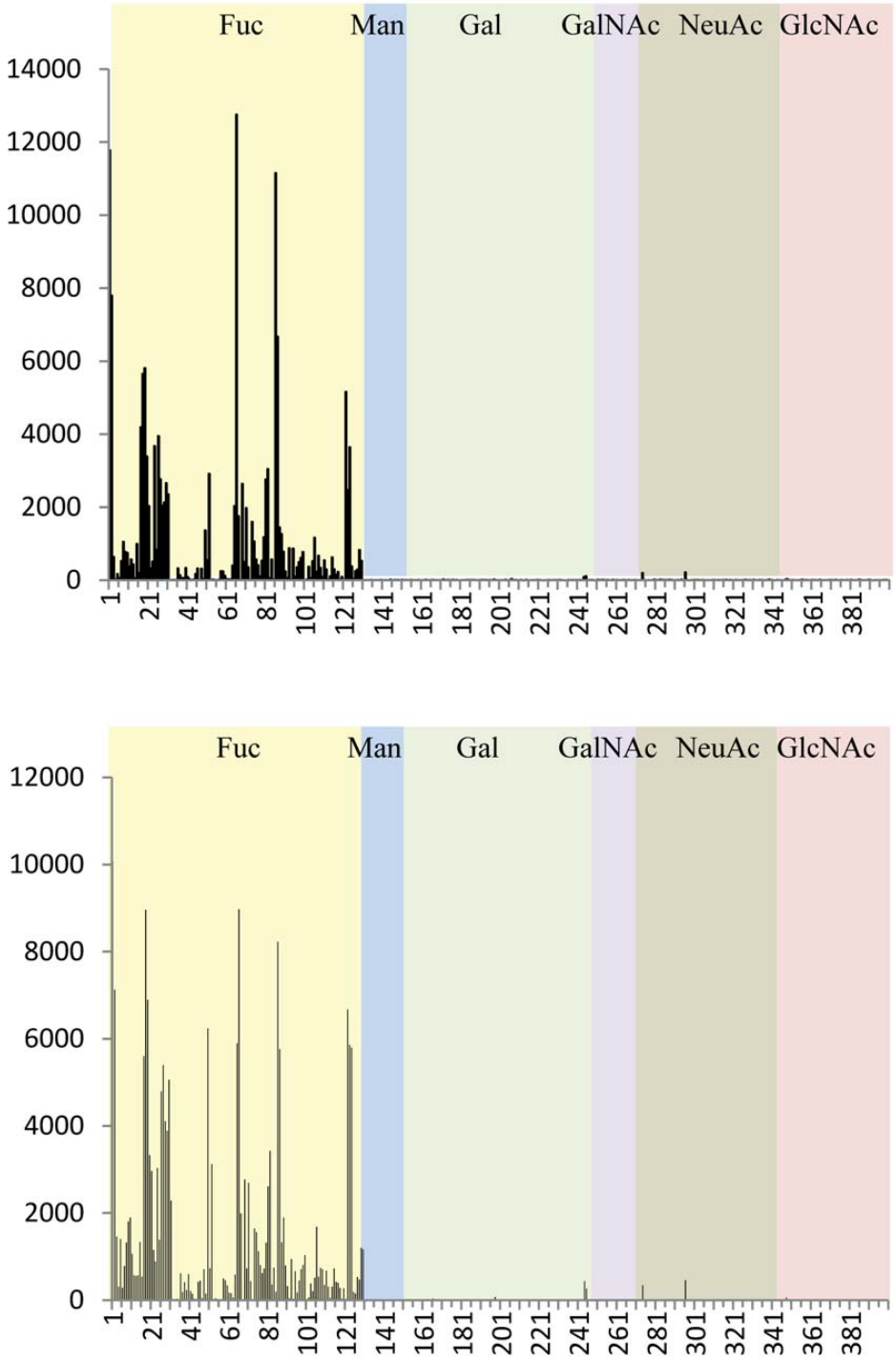

Figure S1. Comparison of binding specificities of BambL 0.2 μg ml^{-1} (top) and RSL 0.2 μg ml^{-1} (bottom) from the Glycan Array data obtained at Consortium for Functional Glycomics

(http://www.functionalglycomics.org). Glycans have been ordered as a function of terminal monosaccharides with removal of duplicates.

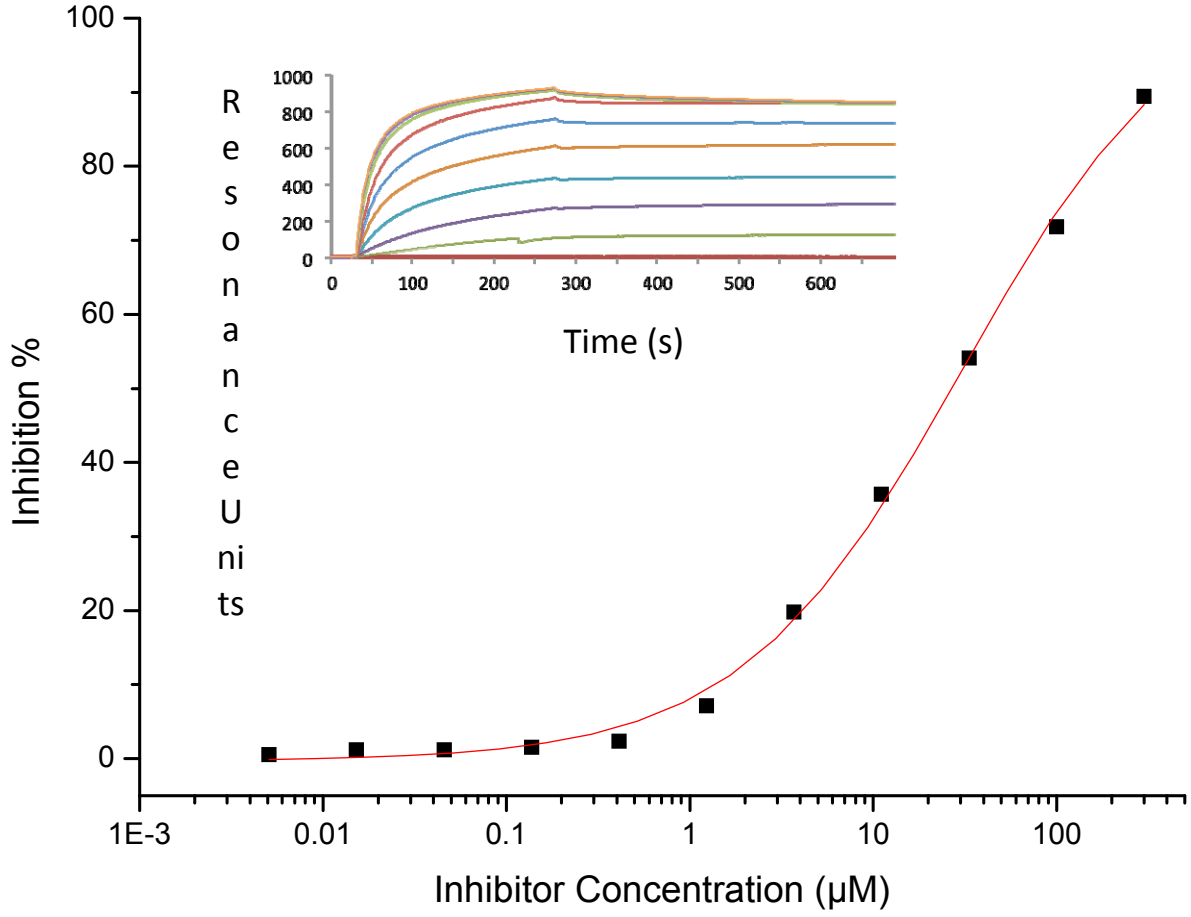

Figure S2. SPR analysis showing inhibition of BambL binding to a fucosylated surface by H-type 2 tetrasaccharide. Sensorgrams show injections of BambL (1 µM) mixed with increasing concentrations of H-type 2 tetrasaccharide (from 0.005 µM, upper sensorgram, to 300 µM, lower sensorgram). Equilibrium response (Req) is used to construct inhibition curve. Experiments were carried out at 25°C at a flow rate of 10 µl min^{-1}.

Figure S4. **Giant unilamellar vesicules.** BambL-binding to various glycosphingolipids is dependent on short fucosylated carbohydrate structures. (a–j) Confocal sections in the equatorial plane of GUVs made from a mixture of 64 mol% DOPC, 1 mol% BodipyFl-C5-HPC (green), 30 mol% cholesterol and 5 mol% of glycosphingolipid. (a-g) type 1 series: (a) Lactotetraosylceramide (Lc4Cer; non-fucosylated precursor), (b) H-type 1, (c) Lewis a, (d) Lewis b, (e) A Lewis b, (f) B type 1, (g) A type 1, (h,i) type 2 series: (h) Lewis X, (i) Lewis Y, (j) globotriaosylceramide (Gb3). Fluorescence-labeled BambL is shown in red. All acquisitions were performed with the same excitation and emission gains. The diameters of the vesicles were all within 10 to 30 µm.

Table S1. Glycan array (v4.1) data for BambL arrangedby the averaged rank calculated from three concentrations

Chart #	Glycan Structure	BambL 1 µg/ml			BambL 0.2 µg/ml			BambL 0.05 µg/ml			Aver. Rank
		Aver.	% CV	Rank	Aver.	% CV	Rank	Aver.	% CV	Rank	
79	Fucα1-3GlcNAcβ-Sp8	36274	2	100	11151	9	87	3908	3	100	96
6	Fucα-Sp8	35197	3	97	11778	2	92	3191	8	82	90
80	Fucα1-4GlcNAcβ-Sp8	33058	14	91	12754	6	100	2578	24	66	86
7	Fucα-Sp9	32357	4	89	9604	12	75	3600	3	92	86
78	Fucα1-2Galβ-Sp8	26289	7	72	7796	3	61	2255	7	58	64
81	Fucβ1-3GlcNAcβ-Sp8	23342	2	64	6669	6	52	1701	4	44	53
74	Fucα1-2Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	25593	7	71	5653	2	44	1443	6	37	51
75	Fucα1-2Galβ1-4GlcNAcβ-Sp0	24469	7	67	5203	8	41	1672	9	43	50
76	Fucα1-2Galβ1-4GlcNAcβ-Sp8	22830	15	63	5809	7	46	1626	11	42	50
69	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	24656	8	68	5159	9	40	1038	6	27	45
71	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	22439	17	62	5562	13	44	1021	20	26	44
73	Fucα1-2Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	23214	6	64	4190	13	33	1251	11	32	43
90	GalNAcα1-3(Fucα1-2)Galβ-Sp18	21223	1	59	4272	6	34	1161	9	30	41
218	Fucα1-2[6OSO3]Galβ1-4GlcNAc-Sp0	18810	8	52	3944	7	31	1097	3	28	37
72	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	19573	5	54	3642	7	29	824	8	21	35
77	Fucα1-2Galβ1-4Glcβ-Sp0	13229	8	36	3390	5	27	1401	4	36	33
60	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	17009	7	47	3043	5	24	992	15	25	32
219	Fucα1-2Galβ1-4[6OSO3]GlcNAc-Sp8	16588	6	46	2765	8	22	1075	3	28	32
70	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	18132	5	50	2468	5	19	689	6	18	29
260	Fucα1-2Galβ1-4[6OSO3]Glc-Sp0	14864	6	41	2659	43	21	662	64	17	26
107	Galα1-3(Fucα1-2)Galβ-Sp8	11862	4	33	2914	8	23	836	8	21	26
125	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	16158	11	45	2639	7	21	447	16	11	26
384	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	13337	11	37	2754	3	22	682	36	17	25
129	Galβ1-3(Fucα1-4)GlcNAc-Sp8	13713	10	38	2467	10	19	717	13	18	25
89	GalNAcα1-3(Fucα1-2)Galβ-Sp8	12180	3	34	2348	6	18	786	7	20	24
451	Fucα1-2Galβ1-4GlcNAcβ1-3(Fucα1-2Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	10585	90	29	3671	35	29	540	102	14	24
220	Fucα1-2[6OSO3]Galβ1-4[6OSO3]Glc-Sp0	12815	3	35	2036	4	16	669	10	17	23
246	Fucα1-2[6OSO3]Galβ1-4Glc-Sp0	11818	8	33	2124	6	17	532	7	14	21
118	Galα1-4(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	9357	4	26	2028	12	16	584	22	15	19
128	Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	11845	9	33	1975	11	15	296	31	8	19
127	Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	10858	10	30	1976	11	15	342	13	9	18
360	Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	9528	22	26	2027	12	16	447	68	11	18
290	Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	11853	11	33	1598	34	13	289	59	7	18
275	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	10083	15	28	1757	7	14	259	24	7	16
93	GalNAcα1-4(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	7820	9	22	1365	9	11	487	7	12	15
108	Galα1-3(Fucα1-2)Galβ-Sp18	8217	22	23	1401	20	11	382	16	10	14
383	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4Glc-Sp21	7712	16	21	1182	29	9	481	20	12	14
151	Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	8701	8	24	1448	6	11	292	16	7	14
27	[3OSO3]Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	7890	5	22	1064	3	8	355	29	9	13
152	Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	8299	5	23	1268	5	10	120	45	3	12

150	Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	6660	4	18	1164	6	9	216	25	6	11
61	Fucα1-2Galβ1-3GalNAcα-Sp8	6101	7	17	1054	2	8	309	11	8	11
367	Fucα1-2Galβ1-3GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	6119	8	17	992	3	8	217	17	6	10
97	GalNAcβ1-4(Fucα1-3)GlcNAcβ-Sp0	5440	11	15	773	29	6	336	7	9	10
67	Fucα1-2Galβ1-3GlcNAcβ-Sp0	5730	11	16	864	13	7	154	46	4	9
95	GalNAcβ1-3(Fucα1-2)Galβ-Sp8	5663	1	16	547	9	4	258	11	7	9
351	Galβ1-4GlcNAcβ1-2Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	5958	12	16	826	7	6	130	31	3	9
325	Fucα1-3(Galβ1-4)GlcNAcβ1-2Manα1-3(Fucα1-3(Galβ1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	5806	12	16	876	15	7	123	33	3	9
382	Galβ1-3GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	4805	9	13	783	11	6	226	23	6	8
113	Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	4104	7	11	867	4	7	269	9	7	8
65	Fucα1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-Sp8	5409	5	15	780	8	6	153	37	4	8
429	Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3GlcNAcβ1-6)Galβ1-4Glc-Sp21	4726	14	13	615	14	5	243	11	6	8
149	Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	5379	13	15	831	13	7	99	39	3	8
428	Fucα1-2Galβ1-3GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4Glc-Sp21	5050	12	14	638	43	5	171	44	4	8
388	Fucα1-2Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	5742	4	16	567	27	4	97	43	2	8
32	[3OSO3]Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	4777	8	13	672	8	5	160	30	4	8
31	[3OSO3]Galβ1-4(Fucα1-3)GlcNAc-Sp0	4119	13	11	596	11	5	189	15	5	7
237	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	4115	14	11	568	37	4	177	54	5	7
68	Fucα1-2Galβ1-3GlcNAcβ-Sp8	3942	10	11	749	16	6	134	35	3	7
340	GlcNAcα1-4Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	4582	8	13	522	28	4	119	64	3	7
288	Galβ1-4(Fucα1-3)[6OSO3]GlcNAc-Sp0	4355	1	12	546	7	4	124	27	3	6
59	Fucα1-2Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-Sp9	4065	7	11	527	9	4	151	12	4	6
361	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAβ-Sp20	3887	5	11	379	52	3	191	46	5	6
251	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	4602	19	13	627	4	5	13	67	0	6
126	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	3885	3	11	503	9	4	99	26	3	6
408	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)Glcβ-Sp21	3636	12	10	570	9	4	102	20	3	6
419	Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	2951	8	8	833	11	7	95	48	2	6
389	Fucα1-2Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp0	4149	6	11	434	11	3	79	22	2	6
238	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	3618	9	10	537	15	4	77	90	2	5
359	Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	3477	15	10	380	14	3	138	27	4	5
329	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	3362	18	9	414	9	3	131	42	3	5
159	Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	3644	5	10	498	10	4	64	58	2	5
66	Fucα1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-Sp10	3345	10	9	481	3	4	97	22	2	5
350	GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	3512	6	10	530	3	4	59	25	2	5
268	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	3577	6	10	371	14	3	56	26	1	5
333	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	3428	3	9	335	5	3	69	36	2	5
458	Neu5Acα2-6Galβ1-4GlcNAcβ1-6(Fucα1-2Galβ1-3GlcNAcβ1-3)Galβ-4Glc-Sp21	3858	4	11	168	63	1	54	48	1	4
385	Galβ1-3GlcNAcβ1-3(Galβ1-3GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	2840	6	8	353	51	3	100	39	3	4

445	Fucα1-2Galβ1-4GlcNAcβ1-2(Fucα1-2Galβ1-4GlcNAcβ1-4)Manα1-3(Fucα1-2Galβ1-4 GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	2853	7	8	511	9	4	43	72	1	4
84	[3OSO3]Galβ1-4(Fucα1-3)Glc-Sp0	2645	23	7	341	61	3	110	10	3	4
459	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6(GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	2506	15	7	324	24	3	119	12	3	4
289	Galβ1-4(Fucα1-3)[6OSO3]Glc-Sp0	2529	5	7	294	34	2	89	18	2	4
398	Fucα1-2Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	2859	10	8	326	44	3	41	60	1	4
155	Galβ1-4GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	2447	6	7	315	35	2	69	23	2	4
456	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6(GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	2405	5	7	320	52	3	72	44	2	4
426	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	2309	10	6	401	8	3	45	62	1	4
253	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	2116	12	6	299	10	2	65	32	2	3
364	Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	1993	7	5	357	37	3	56	61	1	3
457	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6(Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	1929	4	5	246	30	2	83	9	2	3
399	Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	2399	16	7	243	23	2	17	109	0	3
352	Galβ1-3GlcNAcβ1-2Manα1-3(Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	2075	4	6	290	10	2	33	30	1	3
441	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ-Sp8	2087	4	6	217	36	2	44	33	1	3
453	GalNAcα1-3Fucα1-2Galβ1-4GlcNAcβ1-3(GalNAcα1-3Fucα1-2Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	2167	7	6	168	4	1	44	12	1	3
448	Galβ1-4GlcNAcβ1-6GalNAc-Sp14	1960	14	5	203	31	2	26	62	1	3
446	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-4)Manα1-3(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	1669	17	5	250	34	2	41	18	1	3
104	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	1808	6	5	241	22	2	22	22	1	2
255	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp8	1744	7	5	227	15	2	32	31	1	2
425	Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	1772	5	5	199	10	2	35	109	1	2
105	Galα1-3(Fucα1-2)Galβ1-4GlcNAc-Sp0	2000	11	6	119	32	1	32	32	1	2
23	[3OSO3]Galβ1-4(Fucα1-3)[6OSO3]Glc-Sp0	1723	16	5	231	15	2	21	35	1	2
45	Neu5Acα2-3[6OSO3]Galβ1-4GlcNAcβ-Sp8	1652	6	5	197	9	2	25	42	1	2
278	Neu5Gcα2-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	1608	2	4	107	20	1	22	19	1	2
50	Manα1-3(Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp13	1140	3	3	131	7	1	64	17	2	2
83	GalNAcα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	1280	8	4	139	15	1	28	21	1	2
386	Galβ1-4GlcNAcβ1-2(Galβ1-4GlcNAcβ1-4)Manα1-3(Galβ1-4GlcNAcβ1-2(Galβ1-4GlcNAcβ1-6)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp21	1238	9	3	112	37	1	35	13	1	2
217	[3OSO3]Galβ1-4(Fucα1-3)[6OSO3]GlcNAc-Sp8	1352	8	4	91	5	1	22	39	1	2
58	Fucα1-2Galβ1-3GalNAcβ1-3Galα-Sp9	1518	8	4	58	27	0	15	24	0	2
334	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	1284	18	4	88	24	1	15	79	0	2
421	Fucα1-2Galβ1-3GlcNAcβ1-3GalNAc-Sp14	1407	14	4	52	41	0	11	58	0	2
228	Neu5Acα2-3(6-O-Su)Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	1184	4	3	93	9	1	17	56	0	1
374	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	1269	7	3	56	20	0	16	37	0	1
252	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	1178	2	3	110	11	1	5	145	0	1
250	Neu5Acα2-3Galβ1-4(Fucα1-3)[6OSO3]GlcNAcβ-Sp8	1034	9	3	108	12	1	18	73	0	1
87	GalNAcα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	1158	7	3	60	30	0	19	74	0	1
85	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp0	1269	12	3	43	41	0	9	62	0	1

62	Fucα1-2Galβ1-3GalNAcα-Sp14	912	30	3	98	44	1	28	57	1	1
254	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ-Sp8	864	34	2	150	16	1	11	21	0	1
368	Galβ1-4GlcNAcβ1-2(Galβ1-4GlcNAcβ1-4)Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	956	5	3	84	41	1	20	39	1	1
452	Galα1-3Fucα1-2Galβ1-4GlcNAcβ1-3(Galα1-3Fucα1-2Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	1218	15	3	7	104	0	6	139	0	1
86	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	935	13	3	58	39	0	14	30	0	1
280	Neu5Gcα2-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	915	3	3	59	24	0	4	50	0	1
371	Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	668	49	2	94	6	1	19	34	0	1
415	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	948	10	3	40	46	0	5	31	0	1
449	Galβ1-4(Fucα1-3)GlcNAcβ1-6GalNAc-Sp14	719	20	2	59	23	0	22	51	1	1
412	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	879	8	2	22	93	0	10	68	0	1
103	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	813	14	2	38	23	0	8	82	0	1
416	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAc-Sp14	807	18	2	19	38	0	9	43	0	1
369	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	720	4	2	26	42	0	10	71	0	1
64	Fucα1-2Galβ1-3GalNAcβ1-4(Neu5Acα2-3)Galβ1-4Glcβ-Sp9	595	28	2	21	111	0	7	67	0	1
355	KDNα2-3Galβ1-4(Fucα1-3)GlcNAc-Sp0	541	32	1	14	46	0	11	53	0	1
119	Galα1-4Galβ1-4GlcNAcβ-Sp0	515	16	1	27	37	0	7	137	0	1
379	Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4Glc-Sp0	525	21	1	5	125	0	9	67	0	1
417	GalNAcα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAc-Sp14	470	9	1	16	44	0	9	68	0	1
373	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	522	6	1	17	31	0	2	278	0	1
52	GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp13	329	13	1	36	18	0	15	46	0	1
106	Galα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	383	59	1	29	54	0	10	48	0	1
381	Galβ1-3GlcNAcβ1-3(Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ1-6)Galβ1-4Glcβ-Sp0	347	7	1	24	54	0	14	37	0	0
156	Galβ1-4GalNAcβ1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	366	16	1	31	28	0	8	44	0	0
370	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	419	21	1	23	45	0	4	74	0	0
297	Galβ1-3(Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-6)GalNAcα-Sp14	342	12	1	20	33	0	11	42	0	0
341	GlcNAcα1-4Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	61	25	0	32	53	0	37	75	1	0
380	Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAc-Sp0	436	10	1	8	60	0	3	160	0	0
377	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	263	28	1	14	18	0	20	62	1	0
393	Galα1-3Galβ1-3GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp19	368	4	1	11	25	0	7	134	0	0
335	Neu5Acα2-3-Galβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)GalNAc-Sp14	328	30	1	16	45	0	8	88	0	0
63	Fucα1-2Galβ1-3GalNAcβ1-4(Neu5Acα2-3)Galβ1-4Glcβ-Sp0	337	14	1	7	24	0	8	43	0	0
387	GlcNAcβ1-2(GlcNAcβ1-4)Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	320	36	1	16	30	0	7	30	0	0
242	Neu5Acα2-3Galβ1-3(Neu5Acα2-6)GalNAcα-Sp14	226	17	1	18	67	0	13	82	0	0
101	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ-Sp0	274	9	1	5	120	0	10	66	0	0
418	Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	254	24	1	14	45	0	7	89	0	0
409	Neu5Acα2-6Galβ1-3GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4Glc-Sp21	208	20	1	9	85	0	5	77	0	0
320	Neu5Acα2-8Neu5Acα2-8Neu5Acβ-Sp8	2	359	0	6	131	0	25	119	1	0
142	Galβ1-3GalNAcβ1-4(Neu5Acα2-3)Galβ1-4Glcβ-Sp0	144	23	0	14	103	0	7	96	0	0
434	Galβ1-4GlcNAcβ1-2Manα1-3(GlcNAcβ1-4)(Galβ1-	4	48	0	6	150	0	23	82	1	0

	4GlcNAcβ1-2)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21										
402	Galα1-4Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-4Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-LVANKT	11	71	0	23	171	0	17	67	0	0
57	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp13	179	13	0	8	45	0	3	50	0	0
413	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	139	13	0	5	59	0	8	64	0	0
102	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ-Sp8	96	23	0	6	29	0	12	60	0	0
395	Galβ1-4GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	33	17	0	31	79	0	11	104	0	0
92	GalNAcα1-3Galβ-Sp8	80	29	0	6	78	0	13	73	0	0
55	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp8	82	11	0	3	97	0	12	64	0	0
124	Galβ1-2Galβ-Sp8	13	44	0	6	64	0	16	36	0	0
208	Manα1-6(Manα1-2Manα1-3)Manα1-6(Manα1-2Manα1-3)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	55	26	0	20	52	0	5	66	0	0
54	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-N(LT)AVL	6	111	0	19	16	0	10	94	0	0
116	Galα1-3Galβ1-4Glcβ-Sp0	120	47	0	2	352	0	2	206	0	0
392	GalNAcα1-3(Fucα1-2)Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp0	113	38	0	7	30	0	1	246	0	0
244	Neu5Acα2-3Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-Sp0	12	46	0	17	67	0	8	82	0	0
139	Galβ1-3GalNAcα-Sp16	9	71	0	4	98	0	13	15	0	0
454	Neu5Aca2-8Neu5Aca2-3Galb1-3GalNAcb1-4(Neu5Aca2-8Neu5Aca2-3)Galb1-4Glcb-sp0	11	51	0	7	99	0	11	61	0	0
18	GlcN(Gc)β-Sp8	4	95	0	7	55	0	12	65	0	0
444	[6OSO3]Galβ1-3[6OSO3]GlcNAc-Sp0	6	70	0	7	51	0	11	30	0	0
210	Manα1-2Manα1-2Manα1-3(Manα1-2Manα1-3(Manα1-2Manα1-6)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	50	42	0	2	286	0	8	142	0	0
213	Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-3)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	37	80	0	7	57	0	7	32	0	0
430	GlcNAcβ1-2Manα1-3(GlcNAcβ1-4)(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNacβ1-4GlcNAc-Sp21	3	57	0	9	28	0	10	32	0	0
34	[3OSO3]Galβ1-4[6OSO3]GlcNAcβ-Sp8	15	46	0	2	111	0	11	64	0	0
372	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3(GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	54	57	0	6	50	0	5	79	0	0
295	[6OSO3]Galβ1-4[6OSO3]GlcNAcβ-Sp0	2	120	0	7	66	0	11	118	0	0
349	Galβ1-4GlcNAcβ1-2Manα1-3(Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	34	44	0	5	76	0	7	77	0	0
110	Galα1-3GalNAcα-Sp8	5	92	0	3	114	0	11	77	0	0
36	[3OSO3]Galβ1-4GlcNAcβ-Sp8	20	30	0	8	141	0	8	27	0	0
394	Galα1-3Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp19	54	79	0	8	60	0	4	87	0	0
265	Neu5Acα2-6Galβ1-4[6OSO3]GlcNAcβ-Sp8	22	48	0	7	123	0	8	85	0	0
293	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-3GlcNAcβ-Sp0	10	28	0	7	72	0	9	40	0	0
185	GlcNAcβ1-4Galβ1-4GlcNAcβ-Sp8	9	73	0	3	42	0	10	70	0	0
282	Neu5Gcα2-3Galβ1-4Glcβ-Sp0	3	105	0	13	104	0	8	63	0	0
296	6-H2PO3Glcβ-Sp10	3	136	0	1	61	0	11	15	0	0
274	Neu5Acα2-8Neu5Acα2-3Galβ1-4Glcβ-Sp0	3	139	0	6	11	0	10	19	0	0
321	Neu5Gcβ2-6Galβ1-4GlcNAc-Sp8	10	57	0	7	110	0	9	35	0	0
4	GalNAcα-Sp8	4	78	0	13	59	0	7	11	0	0
47	[9NAc]Neu5Acα-Sp8	-1	-613	0	3	98	0	11	18	0	0
233	Neu5Acα2-3(Neu5Acα2-6)GalNAcα-Sp8	7	83	0	2	293	0	10	86	0	0
257	Neu5Acα2-3Galβ1-4GlcNAcβ-Sp0	6	68	0	6	81	0	9	16	0	0
443	[6OSO3]Galβ1-3GlcNAcβ-Sp0	5	168	0	2	160	0	10	135	0	0

146	Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-Sp10	65	59	0	9	19	0	2	77	0	0
88	GlcNAcβ1-3Galβ1-3GalNAcα-Sp8	16	42	0	4	113	0	9	86	0	0
222	Neu5Acα2-3Galβ1-3GalNAcα-Sp14	2	416	0	4	37	0	10	35	0	0
442	GalNAcβ1-6GalNAcβ-Sp8	5	80	0	6	39	0	9	86	0	0
82	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ-Sp0	12	37	0	5	24	0	8	57	0	0
303	Galβ1-4GlcNAcβ1-6Galβ1-4GlcNAcβ-Sp0	2	246	0	2	288	0	10	43	0	0
38	[4OSO3][6OSO3]Galβ1-4GlcNAcβ-Sp0	8	168	0	9	36	0	7	127	0	0
263	Neu5Acα2-6GalNAcα-Sp8	15	43	0	9	55	0	7	66	0	0
391	Neu5Acα2-3(GalNAcβ1-4)Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	6	128	0	7	166	0	8	96	0	0
312	Manα1-6(Manα1-3)Manα1-6(Manα1-3)Manβ-Sp10	5	89	0	15	115	0	6	117	0	0
147	Galβ1-3GlcNAcβ-Sp0	3	130	0	6	174	0	9	34	0	0
212	Manα1-3(Manα1-2Manα1-2Manα1-6)Manα-Sp9	8	48	0	7	77	0	8	42	0	0
281	Neu5Gcα2-3Galβ1-4GlcNAcβ-Sp0	14	101	0	2	157	0	8	59	0	0
267	Neu5Acα2-6Galβ1-4GlcNAcβ-Sp8	20	32	0	8	84	0	6	63	0	0
348	Galβ1-4GlcNAcβ1-2Manα1-6Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	9	59	0	3	210	0	8	17	0	0
29	[3OSO3]Galβ1-3GlcNAcβ-Sp0	6	49	0	9	64	0	7	49	0	0
283	Neu5Gcα2-6GalNAcα-Sp0	10	65	0	1	163	0	9	66	0	0
53	Galβ1-4GlcNAcβ1-2Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	2	89	0	6	104	0	8	41	0	0
196	Glcβ1-4Glcβ-Sp8	10	61	0	12	138	0	5	53	0	0
261	Neu5Acα2-3Galβ1-4Glcβ-Sp0	11	39	0	6	65	0	7	137	0	0
165	Galβ1-3(Galβ1-4GlcNAcβ1-6)GalNAcα-Sp8	10	129	0	10	54	0	6	33	0	0
37	[3OSO3]Galβ-Sp8	5	148	0	10	22	0	6	64	0	0
248	Neu5Acα2-3Galβ1-3GlcNAcβ-Sp8	11	30	0	8	64	0	6	100	0	0
96	GalNAcβ1-3Galα1-4Galβ1-4GlcNAcβ-Sp0	6	70	0	14	108	0	5	93	0	0
376	Neu5Acα2-6Galβ1-4GlcNAcβ1-3GalNAc-Sp14	15	43	0	7	64	0	6	97	0	0
304	GalNAcβ1-3Galβ-Sp8	3	51	0	6	138	0	8	70	0	0
145	Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	5	97	0	7	17	0	7	30	0	0
396	GlcNAcβ1-2Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	7	20	0	5	73	0	7	128	0	0
19	Galβ1-4GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)GalNAcα-Sp8	0	738	0	9	81	0	7	86	0	0
437	Galβ1-4GlcNAcβ1-4(Galβ1-4GlcNAcβ1-2)Manα1-3(GlcNAcβ1-4)(Galβ1-4GlcNAcβ1-6(Galβ1-4-GlcNAcβ1-2)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	5	82	0	8	34	0	6	61	0	0
291	Galβ1-4GlcNAcβ1-3Galβ1-3GlcNAcβ-Sp0	9	52	0	6	58	0	6	98	0	0
319	Neu5Acα2-8Neu5Acβ-Sp17	7	90	0	1	420	0	8	185	0	0
407	GlcNAcβ1-6(GlcNAcβ1-3)GalNAcα-Sp14	6	88	0	2	130	0	8	43	0	0
22	[3OSO3][6OSO3]Galβ1-4GlcNAcβ-Sp0	-1	-430	0	0	-478	0	9	43	0	0
99	GalNAcβ1-4GlcNAcβ-Sp8	8	18	0	4	128	0	7	77	0	0
463	Galα1-3(Fucα1-2)Galβ1-3GalNAcb-Sp8	12	54	0	14	103	0	4	205	0	0
365	Neu5Acα2-6GlcNAcβ1-4GlcNAc-Sp21	3	151	0	6	124	0	7	38	0	0
302	Galβ1-4GlcNAcα1-6Galβ1-4GlcNAcβ-Sp0	12	42	0	7	90	0	6	159	0	0
98	GalNAcβ1-4GlcNAcβ-Sp0	3	138	0	7	94	0	6	68	0	0
438	Galα1-3Galβ1-4Glc-Sp10	-1	-122	0	6	100	0	7	53	0	0
259	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	8	44	0	9	83	0	5	91	0	0
311	Manα1-6Manβ-Sp10	1	494	0	4	119	0	8	75	0	0
160	Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	9	23	0	2	107	0	7	74	0	0
173	GlcNAcβ1-2Galβ1-3GalNAcα-Sp8	3	68	0	9	115	0	6	122	0	0
211	Manα1-3(Manα1-6)Manα-Sp9	1	189	0	7	22	0	7	22	0	0
316	Neu5Acα2-3Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	4	59	0	4	90	0	7	73	0	0

347	Galβ1-4GlcNAcβ1-2Manα1-3Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	28	54	0	8	70	0	3	105	0	0
397	Neu5Acα2-3Galβ1-3GlcNAcβ1-3GalNAcα-Sp14	9	114	0	-1	-349	0	8	95	0	0
30	[3OSO3]Galβ1-3GlcNAcβ-Sp8	5	55	0	10	97	0	5	168	0	0
401	Galα1-4Galβ1-3GlcNAcβ1-2Manα1-3(Galα1-4Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	15	53	0	4	56	0	6	49	0	0
166	Galβ1-3(Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	1	394	0	3	169	0	8	100	0	0
343	Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	10	106	0	7	75	0	5	80	0	0
247	Neu5Acα2-3Galβ1-3GlcNAcβ-Sp0	7	84	0	4	200	0	6	102	0	0
256	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	6	37	0	6	156	0	6	35	0	0
94	GalNAcβ1-3GalNAcα-Sp8	3	50	0	13	43	0	4	87	0	0
1	Galα-Sp8	8	29	0	0	626	0	8	65	0	0
284	Neu5Gcα2-6Galβ1-4GlcNAcβ-Sp0	10	49	0	9	62	0	4	64	0	0
344	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	4	114	0	4	181	0	7	56	0	0
411	Neu5Acα2-3Galβ1-3GalNAcβ1-4(Neu5Acα2-8Neu5Acα2-3)Galβ1-4Glcβ-Sp0	9	79	0	11	30	0	4	62	0	0
235	Neu5Acα2-3GalNAcβ1-4GlcNAcβ-Sp0	-3	-30	0	3	66	0	8	57	0	0
424	Galα1-3Galβ1-3GlcNAcβ1-3GalNAc-Sp14	23	164	0	3	121	0	5	37	0	0
189	GlcNAcβ1-6(Galβ1-3)GalNAcα-Sp8	4	107	0	1	638	0	8	43	0	0
111	Galα1-3GalNAcα-Sp16	3	48	0	1	514	0	8	159	0	0
240	Neu5Acα2-3Galβ1-3[6OSO3]GalNAcα-Sp8	8	51	0	7	52	0	5	38	0	0
336	GlcNAcα1-4Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	5	28	0	-2	-180	0	8	76	0	0
132	Galβ1-3(GlcNAcβ1-6)GalNAc-Sp14	6	132	0	6	86	0	6	108	0	0
239	Neu5Acα2-3Galβ1-3(Neu5Acα2-3Galβ1-4)GlcNAcβ-Sp8	10	26	0	19	53	0	1	226	0	0
10	Neu5Acα-Sp11	3	196	0	3	59	0	7	22	0	0
8	Rhaα-Sp8	15	42	0	17	106	0	1	83	0	0
234	Neu5Acα2-3GalNAcα-Sp8	5	36	0	3	143	0	6	43	0	0
436	Galβ1-4GlcNAcβ1-2Manα1-3(GlcNAcβ1-4)(Galβ1-4GlcNAcβ1-6(Galβ1-4GlcNAcβ1-2)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	6	71	0	1	544	0	7	54	0	0
330	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	3	232	0	7	13	0	6	35	0	0
378	(GalNAcβ1-4GlcNAcβ1-2Manα1-6)GalNAcβ1-4GlcNAcβ1-2Manα1-3Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	13	61	0	7	80	0	4	80	0	0
100	Galα1-2Galβ-Sp8	3	69	0	8	188	0	5	181	0	0
39	[4OSO3]Galβ1-4GlcNAcβ-Sp8	6	63	0	3	98	0	6	83	0	0
163	Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-Sp8	11	44	0	9	63	0	4	42	0	0
143	Galβ1-3GalNAcβ1-4Galβ1-4Glcβ-Sp8	10	99	0	5	23	0	5	34	0	0
366	Neu5Acα2-6GlcNAcβ1-4GlcNAcβ1-4GlcNAc-Sp21	2	132	0	3	68	0	6	28	0	0
123	Galα1-6Glcβ-Sp8	12	57	0	1	229	0	6	102	0	0
51	GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	5	17	0	3	143	0	6	76	0	0
362	Galα1-3Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	4	75	0	3	195	0	6	64	0	0
224	Neu5Acα2-8Neu5Acα2-8Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glcβ-Sp0	1	172	0	9	48	0	5	161	0	0
324	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-3Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	9	31	0	8	55	0	4	151	0	0
13	Glcβ-Sp8	10	52	0	7	109	0	4	73	0	0
184	GlcNAcβ1-4(GlcNAcβ1-6)GalNAcα-Sp8	4	64	0	5	63	0	5	95	0	0
461	Galβ1-4GlcNAcβ-(OCH2CH2)6NH2	13	47	0	5	40	0	5	65	0	0
354	[6OSO3]GlcNAcβ1-3Galβ1-4GlcNAc-β-Sp0	10	40	0	13	71	0	2	100	0	0
175	GlcNAcβ1-3(GlcNAcβ1-6)Galβ1-4GlcNAcβ-Sp8	8	72	0	6	45	0	5	69	0	0

301	Galβ1-4GlcNAcβ1-3(GlcNAcβ1-6)Galβ1-4GlcNAc-Sp0	1	439	0	-1	-217	0	7	87	0	0
431	GlcNAcβ1-4(GlcNAcβ1-2)Manα1-3(GlcNAcβ1-4)(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	4	79	0	4	120	0	6	66	0	0
432	GlcNAcβ1-2Manα1-3(GlcNAcβ1-4)(GlcNAcβ1-6(GlcNAcβ1-2)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	9	17	0	13	63	0	2	135	0	0
227	Neu5Acα2-8Neu5Acα2-8Neu5Acα-Sp8	10	63	0	13	7	0	2	185	0	0
21	[3OSO3][6OSO3]Galβ1-4[6OSO3]GlcNAcβ-Sp0	10	38	0	9	74	0	3	153	0	0
249	Neu5Acα2-3Galβ1-4[6OSO3]GlcNAcβ-Sp8	8	139	0	8	93	0	4	219	0	0
322	Galβ1-3GlcNAcβ1-2Manα1-3(Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	7	34	0	5	103	0	5	57	0	0
131	Galβ1-3(GlcNAcβ1-6)GalNAcα-Sp8	7	133	0	8	52	0	4	47	0	0
137	Galβ1-3GalNAcα-Sp8	5	93	0	8	62	0	4	125	0	0
114	Galα1-3Galβ1-3GlcNAcβ-Sp0	14	41	0	8	66	0	3	85	0	0
271	Neu5Acα2-6Galβ1-4Glcβ-Sp8	3	113	0	6	44	0	5	36	0	0
43	[6OSO3]Galβ1-4GlcNAcβ-Sp8	-1	-583	0	1	1370	0	7	61	0	0
187	GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ-Sp8	2	306	0	6	20	0	5	91	0	0
193	Glcα1-4Glcβ-Sp8	9	52	0	4	57	0	5	55	0	0
204	KDNα2-3Galβ1-4GlcNAcβ-Sp0	8	56	0	5	71	0	4	99	0	0
358	KDNα2-3Galβ1-3GalNAcα-Sp14	7	70	0	5	131	0	5	32	0	0
286	Galβ1-3(Neu5Acα2-3Galβ1-4GlcNAcβ1-6)GalNAcα-Sp14	5	16	0	4	136	0	5	118	0	0
161	Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	3	146	0	6	105	0	4	91	0	0
269	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	8	62	0	5	81	0	4	85	0	0
327	Neu5Ac(9Ac)a2-3Galβ1-3GlcNAcβ-Sp0	11	103	0	7	108	0	3	82	0	0
135	Galβ1-3(Neu5Acβ2-6)GalNAcα-Sp8	10	113	0	2	175	0	5	53	0	0
174	GlcNAcβ1-3(GlcNAcβ1-6)GalNAcα-Sp8	3	133	0	4	54	0	5	22	0	0
403	Galα1-3Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	4	78	0	5	107	0	5	126	0	0
200	GlcAβ-Sp8	4	40	0	1	439	0	6	10	0	0
221	Neu5Acα2-3Galβ1-3GalNAcα-Sp8	3	73	0	9	78	0	4	155	0	0
406	GalNAcβ1-3Galα1-6Galβ1-4Glcβ-Sp8	3	144	0	4	152	0	5	75	0	0
462	Galα1-3(Fucα1-2)Galβ1-3GalNAcα-Sp8	6	78	0	1	373	0	6	44	0	0
342	GlcNAcα1-4Galβ1-3GalNAc-Sp14	14	31	0	3	138	0	4	117	0	0
216	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAc-Sp0	4	71	0	4	13	0	4	133	0	0
332	GalNAcβ1-3Galα1-4Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-Sp0	4	235	0	10	70	0	3	105	0	0
298	Galβ1-3Galβ1-4GlcNAcβ-Sp8	9	87	0	9	46	0	3	105	0	0
307	GlcNAcβ1-3Man-Sp10	11	24	0	5	28	0	3	68	0	0
158	Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	2	107	0	9	24	0	3	182	0	0
314	Manα1-2Manα1-2Manα1-3(Manα1-2Manα1-6(Manα1-2Manα1-3)Manα1-6)Manα-Sp9	-1	-240	0	4	58	0	5	53	0	0
292	Neu5Acα2-3Galβ1-3GlcNAcβ1-3Galβ1-3GlcNAcβ-Sp0	13	63	0	4	183	0	3	88	0	0
190	GlcNAcβ1-6GalNAcα-Sp8	8	11	0	3	71	0	4	40	0	0
195	Glcα1-6Glcα1-6Glcβ-Sp8	6	88	0	2	117	0	5	94	0	0
214	Manα1-6(Manα1-3)Manα1-6(Manα1-3)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	37	58	0	3	129	0	1	106	0	0
258	Neu5Acα2-3Galβ1-4GlcNAcβ-Sp8	4	146	0	15	67	0	1	246	0	0
202	GlcAβ1-6Galβ-Sp8	17	38	0	1	249	0	4	98	0	0
120	Galα1-4Galβ1-4GlcNAcβ-Sp8	5	134	0	10	49	0	2	197	0	0
414	GalNAcα1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-Sp0	3	68	0	7	109	0	4	70	0	0
375	Neu5Acα2-3Galβ1-4GlcNAcβ1-3GalNAc-Sp14	-2	-71	0	18	50	0	1	866	0	0
197	Glcβ1-6Glcβ-Sp8	4	52	0	9	41	0	2	166	0	0
56	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	1	172	0	6	81	0	4	84	0	0

305	GlcAβ1-3GlcNAcβ-Sp8	21	60	0	4	57	0	2	113	0	0
294	[3OSO3][4OSO3]Galβ1-4GlcNAcβ-Sp0	6	31	0	1	237	0	5	81	0	0
144	Galβ1-3Galβ-Sp8	6	102	0	4	78	0	4	44	0	0
229	Neu5Acα2-3(GalNAcβ1-4)Galβ1-4GlcNAcβ-Sp0	7	42	0	4	43	0	4	44	0	0
223	Neu5Acα2-8Neu5Acα2-8Neu5Acα2-8Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glcβ-Sp0	8	58	0	3	111	0	4	163	0	0
357	KDNα2-3Galβ1-4Glc-Sp0	7	78	0	9	41	0	2	267	0	0
346	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	15	32	0	3	167	0	3	93	0	0
148	Galβ1-3GlcNAcβ-Sp8	8	33	0	7	75	0	3	198	0	0
20	GlcNAcβ1-3(GlcNAcβ1-4)(GlcNAcβ1-6)GlcNAc-Sp8	5	39	0	9	40	0	2	191	0	0
172	GlcNAcα1-6Galβ1-4GlcNAcβ-Sp8	9	34	0	13	69	0	1	746	0	0
423	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-3GalNAc-Sp14	21	50	0	7	49	0	1	500	0	0
198	G-ol-Sp8	3	162	0	0	-528	0	5	100	0	0
338	GlcNAcα1-4Galβ1-3GlcNAcβ-Sp0	7	40	0	3	71	0	4	88	0	0
138	Galβ1-3GalNAcα-Sp14	7	36	0	3	95	0	4	31	0	0
188	GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ-Sp8	12	31	0	8	70	0	2	414	0	0
439	Galβ1-4Galβ-Sp10	7	65	0	6	63	0	3	115	0	0
14	Manβ-Sp8	5	82	0	4	68	0	4	77	0	0
5	GalNAcα-Sp15	6	25	0	1	58	0	5	125	0	0
215	Manβ1-4GlcNAcβ-Sp0	3	119	0	9	62	0	2	100	0	0
3	Manα-Sp8	7	41	0	3	146	0	4	145	0	0
245	Neu5Acα2-3Galβ1-3GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	11	44	0	11	68	0	1	245	0	0
40	6-H2PO3Manα-Sp8	5	91	0	2	211	0	4	102	0	0
277	Neu5Acβ2-6Galβ1-4GlcNAcβ-Sp8	5	87	0	4	72	0	3	125	0	0
226	Neu5Acα2-8Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glcβ-Sp0	8	94	0	3	119	0	3	115	0	0
177	GlcNAcβ1-3GalNAcα-Sp14	8	67	0	4	21	0	3	18	0	0
11	Neu5Acβ-Sp8	7	41	0	6	75	0	3	154	0	0
141	Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-Sp0	4	37	0	6	92	0	3	148	0	0
180	GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp8	4	95	0	7	79	0	3	175	0	0
33	[3OSO3]Galβ1-4[6OSO3]GlcNAcβ-Sp0	2	104	0	5	105	0	3	189	0	0
264	Neu5Acα2-6GalNAcβ1-4GlcNAcβ-Sp0	5	128	0	7	142	0	2	177	0	0
140	Galβ1-3GalNAcβ-Sp8	7	89	0	9	74	0	2	334	0	0
455	GalNAcβ1-4Galβ1-4Glc-b-sp0	11	57	0	3	17	0	3	168	0	0
171	GlcNAcα1-3Galβ1-4GlcNAcβ-Sp8	5	44	0	6	111	0	3	145	0	0
203	KDNα2-3Galβ1-3GlcNAcβ-Sp0	8	98	0	6	31	0	2	116	0	0
9	Neu5Acα-Sp8	13	53	0	4	131	0	2	155	0	0
405	Galβ1-3GlcNAcα1-6Galβ1-4GlcNAcβ-Sp0	3	120	0	0	519	0	4	51	0	0
270	Neu5Acα2-6Galβ1-4Glcβ-Sp0	2	203	0	5	30	0	3	93	0	0
231	Neu5Acα2-3(GalNAcβ1-4)Galβ1-4Glcβ-Sp0	8	74	0	9	32	0	1	269	0	0
130	Galβ1-4GlcNAcβ1-6GalNAcα-Sp8	4	36	0	6	57	0	3	95	0	0
192	GlcNAcβ1-6Galβ1-4GlcNAcβ-Sp8	-1	-137	0	3	87	0	4	69	0	0
207	Manα1-2Manα1-3Manα-Sp9	4	118	0	8	64	0	2	102	0	0
153	Galβ1-4[6OSO3]Glcβ-Sp0	4	43	0	4	44	0	3	50	0	0
328	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-3GlcNAcβ-Sp0	4	16	0	2	135	0	3	106	0	0
262	Neu5Acα2-3Galβ1-4Glcβ-Sp8	5	56	0	2	284	0	3	51	0	0
243	Neu5Acα2-3Galβ-Sp8	2	76	0	2	224	0	4	24	0	0
183	GlcNAcβ1-4-MDPLys	11	42	0	1	241	0	3	214	0	0
400	GalNAcα1-3GalNAcβ1-3Galα1-4Galβ1-4GlcNAcβ-Sp0	12	74	0	3	79	0	2	94	0	0
41	[6OSO3]Galβ1-4Glcβ-Sp0	1	252	0	7	43	0	2	108	0	0
287	Galβ1-3GlcNAcβ1-3Galβ1-3GlcNAcβ-Sp0	6	15	0	5	65	0	2	189	0	0

182	GlcNAcβ1-3Galβ1-4Glcβ-Sp0	9	32	0	3	67	0	3	58	0	0
169	Galβ1-4Glcβ-Sp0	9	73	0	4	96	0	2	20	0	0
154	Galβ1-4[6OSO3]Glcβ-Sp8	4	74	0	4	74	0	3	98	0	0
266	Neu5Acα2-6Galβ1-4GlcNAcβ-Sp0	8	49	0	4	118	0	2	134	0	0
300	Galβ1-4GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4GlcNAc-Sp0	3	51	0	5	26	0	2	114	0	0
115	Galα1-3Galβ1-4GlcNAcβ-Sp8	6	81	0	7	42	0	1	156	0	0
315	Neu5Acα2-3Galβ1-3(Neu5Acα2-3Galβ1-4GlcNAcβ1-6)GalNAcα-Sp14	7	88	0	2	86	0	3	85	0	0
157	Galβ1-4GlcNAcβ1-3GalNAcα-Sp8	2	78	0	10	60	0	1	819	0	0
273	Neu5Acα2-8Neu5Acα-Sp8	15	72	0	2	51	0	2	237	0	0
339	GlcNAcα1-4Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-Sp0	4	114	0	11	38	0	0	1413	0	0
225	Neu5Acα2-8Neu5Acα2-8Neu5Acα2-3Galβ1-4Glcβ-Sp0	4	99	0	8	87	0	1	96	0	0
109	Galα1-3(Galα1-4)Galβ1-4GlcNAcβ-Sp8	4	90	0	7	94	0	2	283	0	0
464	Glcα1-6Glcα1-6Glcα1-6Glcβ-Sp10	0	583	0	7	44	0	2	119	0	0
299	Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	3	182	0	11	44	0	0	616	0	0
206	Manα1-2Manα1-3(Manα1-2Manα1-6)Manα-Sp9	5	75	0	4	124	0	2	111	0	0
310	HOOC(CH3)CH-3-O-GlcNAcβ1-4GlcNAcβ-Sp10	8	38	0	12	68	0	-1	-406	0	0
194	Glcα1-4Glcα-Sp8	1	128	0	6	75	0	2	147	0	0
353	Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	4	72	0	7	92	0	1	215	0	0
2	Glcα-Sp8	5	43	0	5	68	0	2	107	0	0
48	[9NAc]Neu5Acα2-6Galβ1-4GlcNAcβ-Sp8	8	66	0	1	297	0	3	72	0	0
121	Galα1-4Galβ1-4Glcβ-Sp0	13	50	0	1	532	0	2	95	0	0
241	Neu5Acα2-3Galβ1-3(Neu5Acα2-6)GalNAcα-Sp8	6	62	0	4	32	0	2	85	0	0
12	Galβ-Sp8	15	47	0	9	65	0	-1	-585	0	0
26	[3OSO3]Galβ1-4[6OSO3]Glcβ-Sp8	4	77	0	0	518	0	3	98	0	0
91	GalNAcα1-3GalNAcβ-Sp8	7	75	0	6	42	0	1	372	0	0
25	[3OSO3]Galβ1-4[6OSO3]Glcβ-Sp0	7	48	0	2	76	0	2	223	0	0
363	Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	4	71	0	2	229	0	3	202	0	0
337	GlcNAcα1-4Galβ1-4GlcNAcβ-Sp0	4	81	0	6	67	0	1	174	0	0
117	Galα1-3Galβ-Sp8	6	81	0	1	94	0	2	113	0	0
317	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	5	21	0	-1	-1011	0	3	112	0	0
345	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6Manβ1-4GlcNAcβ1-4GlcNAc-Sp12	12	51	0	7	65	0	0	3257	0	0
167	Galβ1-4GlcNAcβ-Sp0	4	120	0	5	53	0	1	119	0	0
35	[3OSO3]Galβ1-4GlcNAcβ-Sp0	3	309	0	6	62	0	1	507	0	0
164	Galβ1-4GlcNAcβ1-6(Galβ1-3)GalNAcα-Sp8	3	123	0	3	87	0	2	278	0	0
435	Galβ1-4GlcNAcβ1-4(Galβ1-4GlcNAcβ1-2)Manα1-3(GlcNAcβ1-4)(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	9	142	0	1	584	0	2	313	0	0
186	GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4GlcNAcβ1-4β-Sp8	5	68	0	4	124	0	2	415	0	0
306	GlcNAcβ1-2Manα1-3(Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	15	67	0	9	110	0	-1	-166	0	0
390	Galβ1-3GlcNAcβ1-3GalNAcα-Sp14	7	72	0	2	259	0	2	103	0	0
201	GlcAβ1-3Galβ-Sp8	3	54	0	4	76	0	2	84	0	0
450	Galβ1-4GlcNAcβ1-2Manα-Sp0	9	30	0	1	217	0	2	311	0	0
309	GlcNAcβ1-4GlcNAcβ-Sp12	6	68	0	1	555	0	2	253	0	0
178	GlcNAcβ1-3Galβ-Sp8	6	26	0	1	816	0	2	138	0	0
356	KDNα2-6Galβ1-4GlcNAc-Sp0	6	57	0	-1	-442	0	3	140	0	0
205	Manα1-2Manα1-2Manα1-3Manα-Sp9	7	114	0	1	289	0	2	186	0	0

323	Neu5Acα2-3Galβ1-4GlcNAcβ1-2Manα1-3(Neu5Acα2-3Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	10	46	0	8	63	0	-1	-1372	0	0
331	Galα1-4Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-Sp0	12	75	0	4	43	0	0	1757	0	0
179	GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	5	91	0	-2	-98	0	3	291	0	0
232	Neu5Acα2-3(Neu5Acα2-3Galβ1-3GalNAcβ1-4)Galβ1-4Glcβ-Sp0	2	407	0	-1	-279	0	3	134	0	0
44	[6OSO3]Galβ1-4[6OSO3]Glcβ-Sp8	7	35	0	4	113	0	1	403	0	0
46	[6OSO3]GlcNAcβ-Sp8	9	59	0	3	41	0	1	751	0	0
16	GlcNAcβ-Sp0	3	128	0	2	74	0	2	97	0	0
236	Neu5Acα2-3Galβ1-3[6OSO3]GlcNAc-Sp8	3	35	0	0	764	0	2	212	0	0
191	GlcNAcβ1-6GalNAcα-Sp14	2	124	0	4	70	0	1	201	0	0
28	[3OSO3]Galβ1-3GalNAcα-Sp8	6	127	0	5	102	0	0	684	0	0
133	Galβ1-3(Neu5Acα2-6)GalNAcα-Sp8	5	40	0	8	41	0	-1	-523	0	0
404	Galβ1-3GlcNAcβ1-6Galβ1-4GlcNAcβ-Sp0	7	68	0	3	251	0	1	561	0	0
15	GalNAcβ-Sp8	6	70	0	1	65	0	1	177	0	0
42	[6OSO3]Galβ1-4Glcβ-Sp8	2	156	0	-2	-140	0	3	126	0	0
49	Manα1-3(Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	8	79	0	5	89	0	0	7044	0	0
447	Galβ1-4GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	4	126	0	2	250	0	1	236	0	0
230	Neu5Acα2-3(GalNAcβ1-4)Galβ1-4GlcNAcβ-Sp8	2	67	0	5	66	0	1	389	0	0
112	Galα1-3GalNAcβ-Sp8	10	42	0	5	78	0	0	-1366	0	0
410	Galβ1-3GalNAcβ1-4(Neu5Acα2-8Neu5Acα2-3)Galβ1-4Glcβ-Sp0	6	89	0	4	96	0	0	1853	0	0
162	Galβ1-4GlcNAcβ1-3Galβ1-4Glcβ-Sp0	5	75	0	0	5338	0	2	262	0	0
318	Neu5Acα2-6Galβ1-4GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	8	41	0	-2	-135	0	2	261	0	0
279	Neu5Gcα2-3Galβ1-3GlcNAcβ-Sp0	7	137	0	6	103	0	-1	-731	0	0
308	GlcNAcβ1-4GlcNAcβ-Sp10	4	113	0	3	175	0	1	853	0	0
422	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-3GalNAc-Sp14	6	55	0	7	13	0	-1	-580	0	0
272	Neu5Acα2-6Galβ-Sp8	3	45	0	5	93	0	0	18608	0	0
427	Galβ1-3GlcNAcβ1-2Manα1-3(Galβ1-3GlcNAcβ1-2(Galβ1-3GlcNAcβ1-6)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	3	193	0	3	85	0	1	741	0	0
440	Galβ1-6Galβ-Sp10	2	99	0	-1	-136	0	2	204	0	0
209	Manα1-2Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-2Manα1-3)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	9	69	0	2	179	0	0	2044	0	0
168	Galβ1-4GlcNAcβ-Sp8	11	54	0	-1	-543	0	1	185	0	0
136	Galβ1-3(Neu5Acα2-6)GlcNAcβ1-4Galβ1-4Glcβ-Sp10	3	117	0	-2	-236	0	2	255	0	0
276	Neu5Acβ2-6GalNAcα-Sp8	2	131	0	1	168	0	1	630	0	0
433	GlcNAcβ1-4(GlcNAcβ1-2)Manα1-3(GlcNAcβ1-4)(GlcNAcβ1-6(GlcNAcβ1-2)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp21	0	5598	0	2	163	0	1	380	0	0
460	Galβ1-4GlcNAcβ1-6(Galβ1-4GlcNAcβ1-2)Manα1-6(Galβ1-4GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	15	18	0	11	168	0	-4	-69	0	0
24	[3OSO3]Galβ1-4Glcβ-Sp8	13	119	0	3	164	0	-1	-97	0	0
17	GlcNAcβ-Sp8	19	27	0	0	358	0	-2	-47	0	0
199	GlcAα-Sp8	16	97	0	0	746	0	-1	-221	0	0
176	GlcNAcβ1-3GalNAcα-Sp8	5	33	0	0	17711	0	0	-3486	0	0
134	Galβ1-3(Neu5Acα2-6)GalNAcα-Sp14	2	127	0	3	80	0	-1	-240	0	0
313	Manα1-2Manα1-2Manα1-3(Manα1-2Manα1-6(Manα1-3)Manα1-6)Manα-Sp9	2	262	0	2	173	0	0	-1514	0	0
170	Galβ1-4Glcβ-Sp8	14	67	0	-1	-155	0	-1	-216	0	0
465	Glcα1-4Glcα1-4Glcα1-4Glcβ-Sp10	1	131	0	6	158	0	-2	-39	0	0
285	Neu5Gcα-Sp8	4	121	0	2	117	0	-1	-61	0	0
420	GlcNAcβ1-2Manα1-3(GlcNAcβ1-2(GlcNAcβ1-6)Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	5	67	0	1	149	0	-2	-157	0	0

122	Galα1-4GlcNAcβ-Sp8	7	135	0	1	506	0	-2	-309	0	0
181	GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	1	533	0	8	49	0	-4	-45	0	0
326	Neu5Ac(9Ac)a2-3Galβ1-4GlcNAcβ-Sp0	4	140	0	2	116	0	-3	-110	0	0

Sp0	$CH_2CH_2NH_2$
Sp8	$CH_2CH_2CH_2NH_2$
Sp9	$CH_2CH_2CH_2CH_2CH_2NH_2$
Sp10	$NHCOCH_2NH$
Sp11	$OCH_2C_6H_4$-p-$NHCOCH_2NH$
Sp12	Asparagine
Sp13	Glycine
Sp14	Threonine
Sp15	Serine
Sp16	PNP ($OC_6H_4NH_2$)
Sp17	$OCH_2C_6H_4NH_2$
Sp18	$O(CH_2)_3NHCO(CH_2)_5NH_2$
Sp19	EN or NK
Sp20	GENR
Sp21	N(CH3)-O-(CH2)2-NH2
Sp22	NST
MDPLys	Mur-L-Ala-D-iGlnβ-(CH2)4NH2

Table S2. Glycan array (v4.1) data for all fucosylated glycans bound by BambL at 0.2 μg ml^{-1}

Chart No	CFG no	Glycan Structure	Average	StDEV
1	6	Fucα-Sp8	11778	255
2	78	Fucα1-2Galβ-Sp8	7796	252
3	61	Fucα1-2Galβ1-3GalNAcα-Sp8	1054	19
4	367	Fucα1-2Galβ1-3GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	992	25
5	65	Fucα1-2Galβ1-3GlcNAcβ1-3Galβ1-4Glcβ-Sp8	780	62
6	68	Fucα1-2Galβ1-3GlcNAcβ-Sp8	749	120
7	428	Fucα1-2Galβ1-3GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4Glc-Sp21	638	274
8	388	Fucα1-2Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	567	155
9	59	Fucα1-2Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glcβ-Sp9	527	48
10	389	Fucα1-2Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp0	434	50
11	359	Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	380	55
12	425	Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	199	19
13	458	Neu5Acα2-6Galβ1-4GlcNAcβ1-6(Fucα1-2Galβ1-3GlcNAcβ1-3)Galβ-4Glc-Sp21	168	106
14	58	Fucα1-2Galβ1-3GalNAcβ1-3Galα-Sp9	58	16
15	421	Fucα1-2Galβ1-3GlcNAcβ1-3GalNAc-Sp14	52	21
16	64	Fucα1-2Galβ1-3GalNAcβ1-4(Neu5Acα2-3)Galβ1-4Glcβ-Sp9	21	24
17	76	Fucα1-2Galβ1-4GlcNAcβ-Sp8	5809	384
18	74	Fucα1-2Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	5653	94
19	73	Fucα1-2Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	4190	559
20	218	Fucα1-2[6OSO3]Galβ1-4GlcNAc-Sp0	3944	265
21	451	Fucα1-2Galβ1-4GlcNAcβ1-3(Fucα1-2Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	3671	1276
22	77	Fucα1-2Galβ1-4Glcβ-Sp0	3390	157
23	219	Fucα1-2Galβ1-4[6OSO3]GlcNAc-Sp8	2765	215
24	260	Fucα1-2Galβ1-4[6OSO3]Glc-Sp0	2659	1140
25	246	Fucα1-2[6OSO3]Galβ1-4Glc-Sp0	2124	132
26	220	Fucα1-2[6OSO3]Galβ1-4[6OSO3]Glc-Sp0	2036	90
27	360	Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	2027	245
28	419	Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	833	92
29	445	Fucα1-2Galβ1-4GlcNAcβ1-2(Fucα1-2Galβ1-4GlcNAcβ1-4)Manα1-3(Fucα1-2Galβ1-4 GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	511	45
30	398	Fucα1-2Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	326	144
31	89	GalNAcα1-3(Fucα1-2)Galβ-Sp8	2348	133
32	333	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	335	16

33	459	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6(GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	324	77
34	456	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6(GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	320	167
35	155	Galβ1-4GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	315	110
36	453	GalNAcα1-3Fucα1-2Galβ1-4GlcNAcβ1-3(GalNAcα1-3Fucα1-2Galβ1-4GlcNAcβ1-6)GalNAc-Sp14	168	6
37	83	GalNAcα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	139	21
38	334	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	88	21
39	87	GalNAcα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	60	18
40	86	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp8	58	23
41				
42	369	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	26	11
43	417	GalNAcα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAc-Sp14	16	7
44	392	GalNAcα1-3(Fucα1-2)Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ-Sp0	7	2
45	423	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-3GalNAc-Sp14	7	3
46	372	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3(GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	6	3
47	413	GalNAcα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	5	3
48	379	Galβ1-3GalNAcα1-3(Fucα1-2)Galβ1-4Glc-Sp0	5	7
49	82	GalNAcα1-3(Fucα1-2)Galβ1-3GlcNAcβ-Sp0	5	1
50				
51				
52	107	Galα1-3(Fucα1-2)Galβ-Sp8	2914	220
53	426	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	401	32
54	457	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6(Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	246	74
55	104	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	241	53
56	105	Galα1-3(Fucα1-2)Galβ1-4GlcNAc-Sp0	119	39
57	106	Galα1-3(Fucα1-2)Galβ1-4Glcβ-Sp0	29	16
58	370	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	23	10
59	412	Galα1-3(Fucα1-2)Galβ1-4GlcNAcβ1-3GalNAcα-Sp14	22	21
60	373	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-3(Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	17	5
61	463	Galα1-3(Fucα1-2)Galβ1-3GalNAcb-Sp8	14	14
62	422	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ1-3GalNAc-Sp14	7	1
63	102	Galα1-3(Fucα1-2)Galβ1-3GlcNAcβ-Sp8	6	2
64	462	Galα1-3(Fucα1-2)Galβ1-3GalNAcα-Sp8	1	2

65				
66	80	Fucα1-4GlcNAcβ-Sp8	12754	745
67	125	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	2639	172
68	128	Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	1975	213
69	275	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	1757	126
70	27	[3OSO3]Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	1064	31
71	237	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	568	210
72	238	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	537	83
73	126	Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp0	503	47
74	329	Neu5Acα2-3Galβ1-3(Fucα1-4)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	414	37
75	364	Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	357	132
76	278	Neu5Gcα2-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	107	22
77	394	Galα1-3Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAc-Sp19	8	5
78	353	Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	7	6
79	60	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ-Sp8	3043	164
80	384	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	2754	70
81	383	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-3(Galβ1-4GlcNAcβ1-6)Galβ1-4Glc-Sp21	1182	339
82	408	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)Glcβ-Sp21	570	50
83	374	Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-3(Fucα1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp19	56	11
84	416	Galα1-3(Fucα1-2)Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAc-Sp14	19	7
85	79	Fucα1-3GlcNAcβ-Sp8	11151	989
86	290	Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-3(Fucα1-4)GlcNAcβ-Sp0	1598	543
87	151	Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	1448	94
88	152	Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ1-4Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	1268	58
89	150	Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	1164	75
90	325	Fucα1-3(Galβ1-4)GlcNAcβ1-2Manα1-3(Fucα1-3(Galβ1-4)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	876	129
91	113	Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	867	38
92	382	Galβ1-3GlcNAcβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	783	82
93	97	GalNAcβ1-4(Fucα1-3)GlcNAcβ-Sp0	773	225
94	32	[3OSO3]Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	672	53
95	251	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	627	24
96	429	Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3GlcNAcβ1-6)Galβ1-4Glc-Sp21	615	87
97	288	Galβ1-4(Fucα1-3)[6OSO3]GlcNAc-Sp0	546	37
98	340	GlcNAcα1-4Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	522	148

99	159	Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	498	49
100	268	Neu5Acα2-6Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	371	50
101	385	Galβ1-3GlcNAcβ1-3(Galβ1-3GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-6)Galβ1-4Glc-Sp21	353	181
102	84	[3OSO3]Galβ1-4(Fucα1-3)Glc-Sp0	341	208
103	253	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	299	30
104	289	Galβ1-4(Fucα1-3)[6OSO3]Glc-Sp0	294	101
105	399	Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	243	55
106	23	[3OSO3]Galβ1-4(Fucα1-3)[6OSO3]Glc-Sp0	231	36
107	255	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4GlcNAcβ-Sp8	227	34
108	254	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ-Sp8	150	23
109	250	Neu5Acα2-3Galβ1-4(Fucα1-3)[6OSO3]GlcNAcβ-Sp8	108	13
110	371	Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Galα1-3Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp20	94	6
111	228	Neu5Acα2-3(6-O-Su)Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	93	9
112	217	[3OSO3]Galβ1-4(Fucα1-3)[6OSO3]GlcNAc-Sp8	91	5
113	280	Neu5Gcα2-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	59	14
114	449	Galβ1-4(Fucα1-3)GlcNAcβ1-6GalNAc-Sp14	59	14
115	297	Galβ1-3(Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-6)GalNAcα-Sp14	20	7
116	335	Neu5Acα2-3-Galβ1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-6)GalNAc-Sp14	16	7
117	355	KDNα2-3Galβ1-4(Fucα1-3)GlcNAc-Sp0	14	6
118	418	Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	14	6
119	377	Neu5Acα2-3Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	14	3
120	216	Neu5Acα2-3Galβ1-4GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAc-Sp0	4	1
121	69	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	5159	466
122	72	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ-Sp8	3642	261
123	70	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ1-3Galβ1-4(Fucα1-3)GlcNAcβ-Sp0	2468	123
124	361	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-3(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAβ-Sp20	379	197
125	446	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-4)Manα1-3(Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4GlcNAcβ-Sp12	250	84
126	415	Fucα1-2Galβ1-4(Fucα1-3)GlcNAcβ1-3GalNAcα-Sp14	40	19
127	351	Galβ1-4GlcNAcβ1-2Manα1-3(Galβ1-4GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	826	60
128	350	GlcNAcβ1-2Manα1-3(GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	530	15
129	352	Galβ1-3GlcNAcβ1-2Manα1-3(Galβ1-3GlcNAcβ1-2Manα1-6)Manβ1-4GlcNAcβ1-4(Fucα1-6)GlcNAcβ-Sp22	290	30

Table S3. Φ and Ψ torsion angles of at the glycosidic linkages of all oligosaccharides bound to BambL[a]

	glycan[a]	αFuc1-2Gal	αGal1-3Gal	βGal1-4Glc	βGal1-3GlcNAc	βGlcNAb1-3Gal	βGal1-4GlcNAc
B-tetra							
Site A	αFuc1-2Gal	-90, -130					
Site AB	Fuc						
Site B	B-tetra	-111, -153	143, 148	-66,163			
Site BC	Fuc						
Site C	B-tetra	-95, -163	137 133	-55, -100			
Site CA	Fuc						
H-type tetra							
Site A	H-type 1 tri [c]	-106, -141			-44, 161		
Site AB	αFuc1-2Gal	-83, -121					
Site B	H-type 1 tri	-125, -141			-37, 117		
Site BC	H-type 1 tri	-142, -142			-56, -179		
Site C	H-type 1 tetra	-115, -143			-52, 167	-75, 90	
Site CA	H-type 1 tri	-130, -146			-52, 119		
H-type 2 tetra							
Site A	H-type 2 tri [c]	-126, -144					-65, -123
Site AB	H-type 2 tri	-124, -146					-79, 81
Site B	H-type 2 tri	-142, -137					-70, -129
Site BC	Fuc						
Site C	H-type 2 tri	-136, -142					-69, -122
Site CA	H-type 2 tri	-108, -175					-70, 88

[a] Torsion angles defined as : Φ = Θ(O-5 — C-1— O-1— C-x), Ψ = ΘΘ(C-1 — O-1— C-x— C-x+1)

[b] Fraction of the oligosaccharides that can be seen in the electron density

[c] H-type 1 tri : αFuc1-2βGal1-3GlcNAc, H-type 2 tri: αFuc1-2βGal1-4GlcNAc