Supporting Information

Identification of neutrophil granule glycoproteins as Lewis^x-containing ligands cleared by the scavenger receptor C-type lectin

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Figure S1. Identification by mass spectrometry of neutrophil proteins isolated by affinity chromatography on immobilized SRCL. A portion of the gel in Fig. 2A is shown. Rectangles indicate regions of the gel excised for analysis. The top 10 matches for each numbered sample are provided in Table S1.

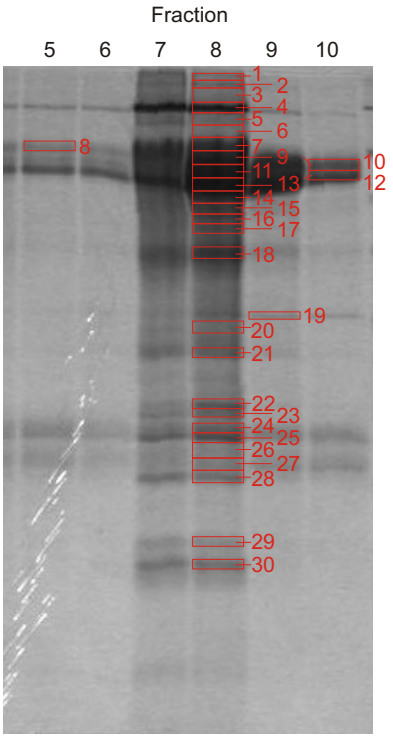


Table S1: Identification by mass spectrometry of neutrophil proteins isolated by affinity chromatography on immobilized SRCL. Scores over 55 are significant ($p<0.05$). Significant matches which are considered to be candidate ligands for SRCL based on factors including known expression in neutrophils and presence of glycosylation are highlighted in yellow. Non-significant matches which are considered to be candidate ligands by the same criteria are highlighted in orange. Where multiple candidate ligands are indicated in a sample, these arise from largely non-overlapping sets of peptides. Significant matches highlighted in grey are not considered to be genuine because they arise largely from peptides contributing to a higher-scoring match. Significant matches highlighted in blue are not of neutrophil origin: hemoglobin from erythrocyte contamination of the granulocyte preparation and exogenous keratin introduced during sample preparation.

Sample	Matched proteins: Mowse score and SwissProt accession code																			
Number	1		2		3		4		5		6		7		8		9		10	
1	154	TRFL	81	ITAM	47	PLEC1	39	PA24C	38	LRRT4	38	NDUAC	35	KTN1	33	OLFM4	32	RYR2	32	FRPD4
2	118	TRFL	49	MGA	44	G3ST2	43	ITAM	35	NDUAC	33	CLIP3	33	EXDL2	32	LRRT4	32	DYH8	32	NMT2
3	172	ITAM	58	TRFL	51	TMED4	46	AKAP9	44	MERL	43	ZNF70	43	S3TC2	41	AT2B4	39	CKAP2	39	TLN2
4	301	ITAM	44	MYST1	40	SNX27	35	PRKDC	35	GSTM5	34	PYC	32	IQCG	32	TRM1	32	TMED4	32	TRP13
5	151	ITAM	51	TMED4	51	PRKDC	47	CYTSA	44	G3ST2	41	ZFP2	41	TRFL	40	PLOD2	40	K0692	40	Z354B
6	156	MMP9+ITAM	131	ITAM+TCHP	91	MMP9	70	ITAM	43	ANR47	42	TCHP	42	TRPV5	41	DSRAD	41	MYH9	40	RASL1
7	92	MMP9	90	HEAT1+PLEC1	54	IPP2M	49	PGM1	46	CEP35	45	PCM1	44	I2C2	43	LUZP1	41	KCC4	40	CF168
8	129	MMP9	47	TCHP	46	PI3R4	45	KAD3	40	ANR35	39	ROCK2	36	PTPRB	35	SMRD2	33	CT085	33	ABL1
9	216	TRFL+MMP9	149	TRFL	60	PLEC1	57	MMP9	57	ZN442	55	CTRO	52	AKAP9	50	CENPH	48	CF168	47	DYH8
10	382	TRFL	43	SYNE2	42	ADCK5	37	TXND2	37	NUMA1	35	VATC1	35	TSYL1	35	PLEC1	34	RAB21	34	RM20
11	201	TRFL	59	NDUAC	51	PLEC1	46	GSLG1	45	CL025	45	ALDR	42	HKDC1	41	SKT	41	K2C6B	41	PSA
12	379	TRFL	38	KPSH1	36	DOC11	34	VATC1	34	FA83D	33	RM20	33	ADCK5	33	MYH9	33	STT3A	33	HMMR
13	174	TRFL	63	PLEC1	52	MACF4	46	MACF1	46	CF165	45	MYH9	44	DYH8	43	UACA	42	CENPH	42	AKAP9
14	248	TRFL	62	PLEC1	56	ZN442	51	SYNE2	50	CENPH	47	TACC1	45	CA125	44	MYH9	43	CF165	42	CUL4B
15	118	TRFL	40	EFHD2	38	PLEC1	38	PFD2	36	CO9A2	33	CI068	32	FA54A	31	CD2L2	31	ZC3H3	31	GSTM5
16	152	TRFL	51	PLEC1	48	FA54A	38	GSTM5	37	PFD2	37	PP1R7	35	CSAG2	34	SAM12	33	PERI	32	IL1F8
17	69	TRFL	40	LMNA	37	PSMG3	37	CUL4A	37	PP1R7	35	NDUAC	35	LTB4D	34	EFHD2	33	ZN468	32	ITIH4
18	258	TRFL	77	HPT	49	SYNE2	43	VATC1	41	INP4B	40	PM2L8	39	PLEC1	36	SYDM	35	RHG18	35	RS4Y1
19	102	CH3L1	40	TRFL	34	MED10	30	KINH	28	NDUA2	28	PRVA	27	K22E	26	PRDX5	26	MCM6	25	S18L2
20	75	TRFL	69	MMP8	52	ZN438	45	K0692	42	RS6	42	RN5A	42	CMBL	41	K2C8	40	ZN383	38	YYY5
21	124	TRFL	44	TISR	42	K0692	35	AP1M2	32	TALDO	31	SH21B	31	KCTD1	30	DYH8	29	BAGE1	29	RT4I1
22	133	MMP8	47	PGRP	37	NGAL	33	ABCD1	32	MYO1B	32	LMNB1	28	ARD1	28	COG1	28	OVOL2	27	TAGL2
23	104	CATG	51	PGRP	38	NGAL	34	EVI5L	29	VASH1	28	ENOA	28	PKHG1	27	DNJB5	27	GFOD2	25	ATR
24	83	K1C14	73	K1C16	50	NGAL	41	K1C17	39	K1C10	38	K2C6A	38	K2C6B	38	K2C6C	34	K1C15	32	CD028
25	131	NGAL	40	ZN277	34	THYN1	32	Z324B	32	VGFR3	32	RABP1	29	PGTA	29	TXTP	28	CT004	28	RL23
26	61	MMP8	49	NSD1	46	ORN	45	DYH11	44	ZN773	43	PPCT	43	PIWL4	41	CI070	41	LIPA1	41	ZN565
27	33	B4GN1	33	RABP1	29	RHOF	29	PPID	28	H1T	27	MY18B	27	ADPPT	26	RFC4	26	TIAR	26	PLXA4
28	33	WIPF2	31	GUF1	29	RHOF	28	LRC39	26	TPM4	25	AURKC	25	NPTX2	25	TIGA1	22	CDK6	21	MUM1
29	29	DULRD	29	PRKX	23	PERE	23	NDUA2	22	H2AV	22	H2AZ	22	ATP5H	21	CC64B	21	TRM1	21	TS101
30	78	HBA	71	HBB	45	HBD	28	ADCK2	27	TRM1	24	BAT5	23	RPB11	22	SUMO4	21	PSMG3	21	TPM1

Table S2: Candidate ligands for SRCL identified by mass spectrometry.

Sample number	Protein	SwissProt Accession	Molecular weight	Mowse score[a]	Number of peptides matched
1	Lactoferrin	TRFL	78132	154	25
	Integrin alpha-M	ITAM	127099	81	19
2	Lactoferrin	TRFL	78132	118	22
3	Integrin alpha-M	ITAM	127099	172	29
	Lactoferrin	TRFL	78132	58	12
4	Integrin alpha-M	ITAM	127099	301	38
5	Integrin alpha-M	ITAM	127099	151	27
	Intercellular adhesion molecule-3	ICAM3	59541	n/a[b]	4
6	Matrix metalloproteinase-9	MMP9	78377	91	17
	Integrin alpha-M	ITAM	127099	70	18
7	Matrix metalloproteinase-9	MMP9	78377	92	17
	Integrin beta-2	ITB2	84782	n/a[c]	8
8	Matrix metalloproteinase-9	MMP9	78377	129	20
	Integrin beta-2	ITB2	84782	n/a[d]	6
9	Lactoferrin	TRFL	78132	149	25
	Matrix metalloproteinase-9	MMP9	78377	57	13
	Integrin beta-2	ITB2	84782	n/a[e]	11
10	Lactoferrin	TRFL	78132	382	42
11	Lactoferrin	TRFL	78132	201	29
12	Lactoferrin	TRFL	78132	379	39
13	Lactoferrin	TRFL	78132	174	27
14	Lactoferrin	TRFL	78132	248	33
15	Lactoferrin	TRFL	78132	118	22
16	Lactoferrin	TRFL	78132	152	22
17	Lactoferrin	TRFL	78132	69	17
18	Lactoferrin	TRFL	78132	258	28
	Haptoglobin	HPT	45177	77	11
19	Chitinase 3-like protein 1 (YKL-40)	CH3L1	42598	102	13
20	Lactoferrin	TRFL	78132	75	16
	Neutrophil collagenase	MMP8	53379	69	12
21	Lactoferrin	TRFL	78132	124	20
22	Neutrophil collagenase	MMP8	53379	133	14
	Peptidoglycan recognition protein	PGRP	21717	47	5
23	Cathepsin G	CATG	28819	104	14
	Peptidoglycan recognition protein	PGRP	21717	51	7
25	Neutrophil gelatinase-associated lipocalin	NGAL	22574	131	11
26	Neutrophil collagenase	MMP8	53379	61	11

[a] Where a Mowse score is not given, identification of the protein was based on inspection of the list of peptides not assigned to proteins for matches to known Lewis^x-containing neutrophil proteins. Observed peptide masses that support these protein indentifications are indicated in footnotes.

[b] 948.4904, 1001.6321, 1126.6748, 1867.9636

[c] 1089.5792, 1126.6500, 1157.6104, 1362.6886, 1482.8060, 1672.9215, 1691.7974, 1781.8929

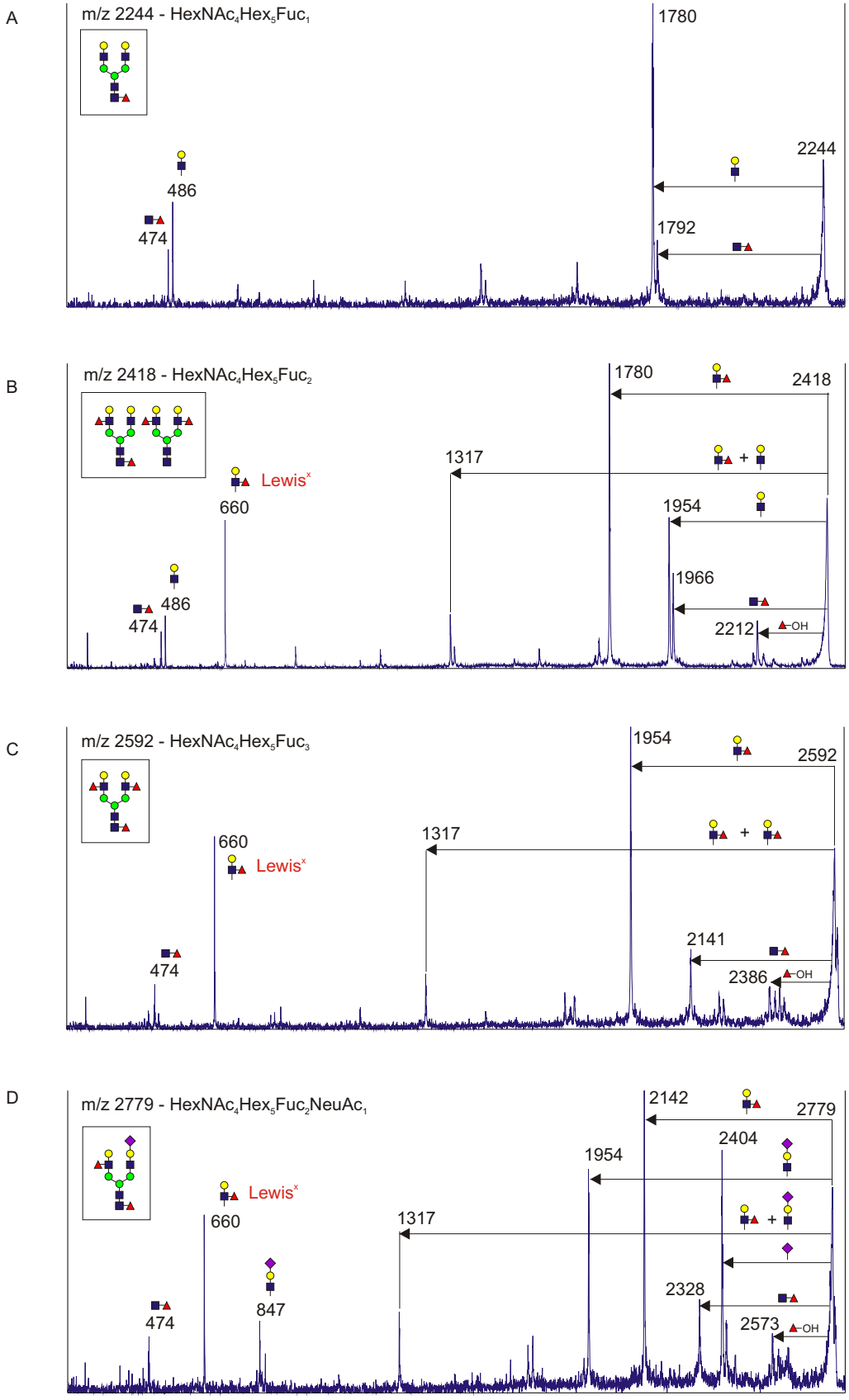
[d] 1113.5173, 1126.6409, 1157.6183, 1165.5754, 1367.7529, 1672.9430

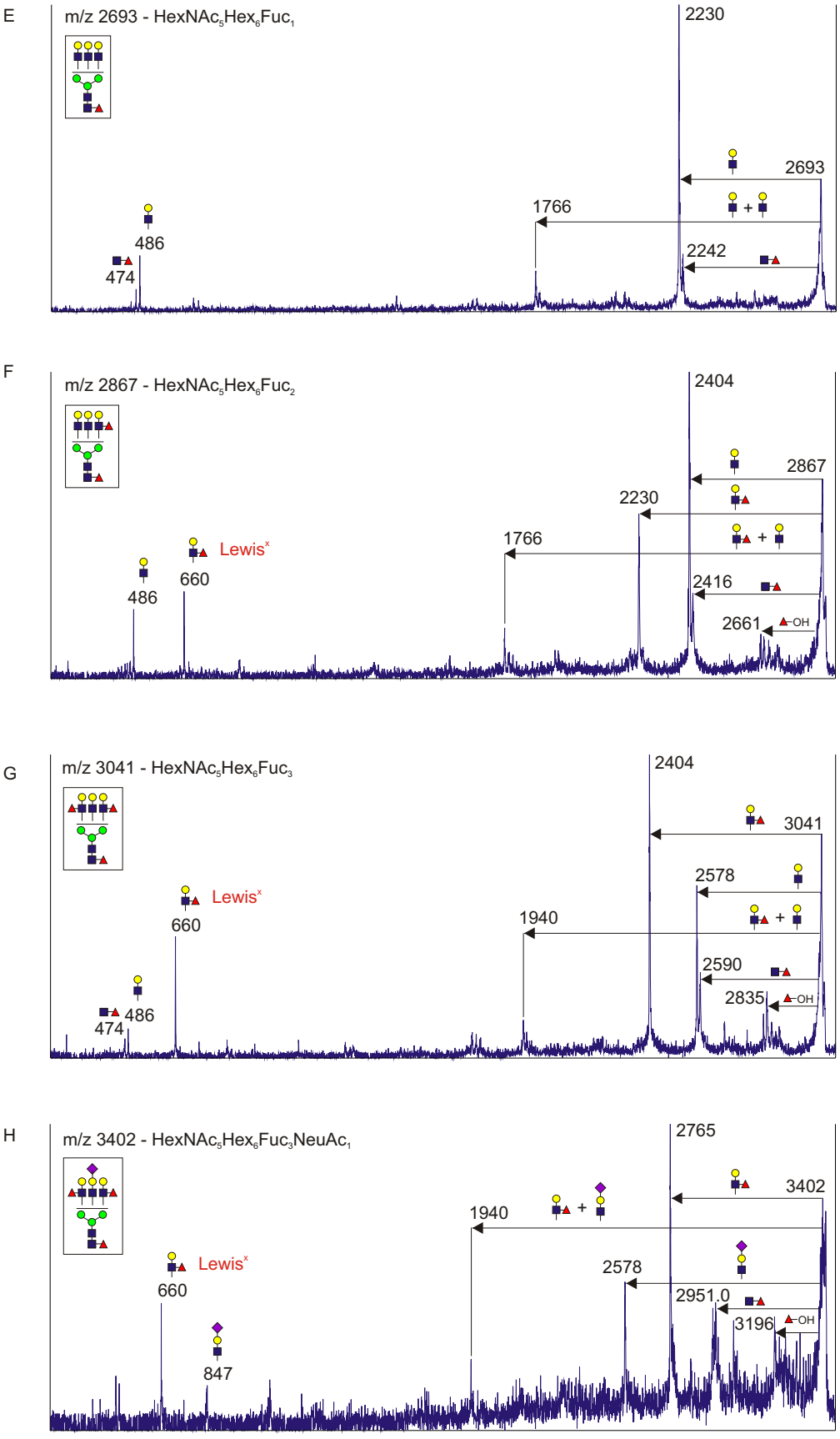
[e] 969.5200, 1089.5743, 1126.6425, 1152.5632, 1157.6016, 1165.5619, 1362.6875, 1482.8025, 1672.9193, 1691.8182,
1781.8882

Table S3: Monosaccharide compositions of N-glycans from neutrophil lactoferrin.

m/z values observed	Glycan composition
2244.1	$HexNAc_4Hex_5Fuc_1$
2418.2	$HexNAc_4Hex_5Fuc_2$
2592.3	$HexNAc_4Hex_5Fuc_3$
2693.3	$HexNAc_5Hex_6Fuc_1$
2779.4	$HexNAc_4Hex_5Fuc_2NeuAc_1$
2867.4	$HexNAc_5Hex_6Fuc_2$
3041.5	$HexNAc_5Hex_6Fuc_3$
3142.5	$HexNAc_6Hex_7Fuc_1$
3215.6	$HexNAc_5Hex_6Fuc_4$
3228.6	$HexNAc_5Hex_6Fuc_2NeuAc_1$
3316.6	$HexNAc_6Hex_7Fuc_2$
3402.6	$HexNAc_5Hex_6Fuc_3NeuAc_1$
3490.7	$HexNAc_6Hex_7Fuc_3$
3664.7	$HexNAc_6Hex_7Fuc_4$
3765.8	$HexNAc_7Hex_8Fuc_2$
3851.9	$HexNAc_6Hex_7Fuc_3NeuAc_1$
3940.0	$HexNAc_7Hex_8Fuc_3$
4114.0	$HexNAc_7Hex_8Fuc_4$
4215.1	$HexNAc_8Hex_9Fuc_2$
4288.1	$HexNAc_7Hex_8Fuc_5$
4301.0	$HexNAc_7Hex_8Fuc_3NeuAc_1$
4389.0	$HexNAc_8Hex_9Fuc_3$
4475.2	$HexNAc_7Hex_8Fuc_4NeuAc_1$
4563.1	$HexNAc_8Hex_9Fuc_4$
4653.5	$HexNAc_7Hex_8Fuc_5NeuAc_1$
4737.2	$HexNAc_8Hex_9Fuc_5$
4838.4	$HexNAc_9Hex_{10}Fuc_3$
4911.3	$HexNAc_8Hex_9Fuc_6$
4924.7	$HexNAc_8Hex_9Fuc_4NeuAc_1$
5012.2	$HexNAc_9Hex_{10}Fuc_4$
5098.2	$HexNAc_8Hex_9Fuc_5NeuAc_1$
5187.2	$HexNAc_9Hex_{10}Fuc_5$
5360.3	$HexNAc_9Hex_{10}Fuc_6$

Figure S2: MS/MS analysis of neutrophil lactoferrin N-glycans.

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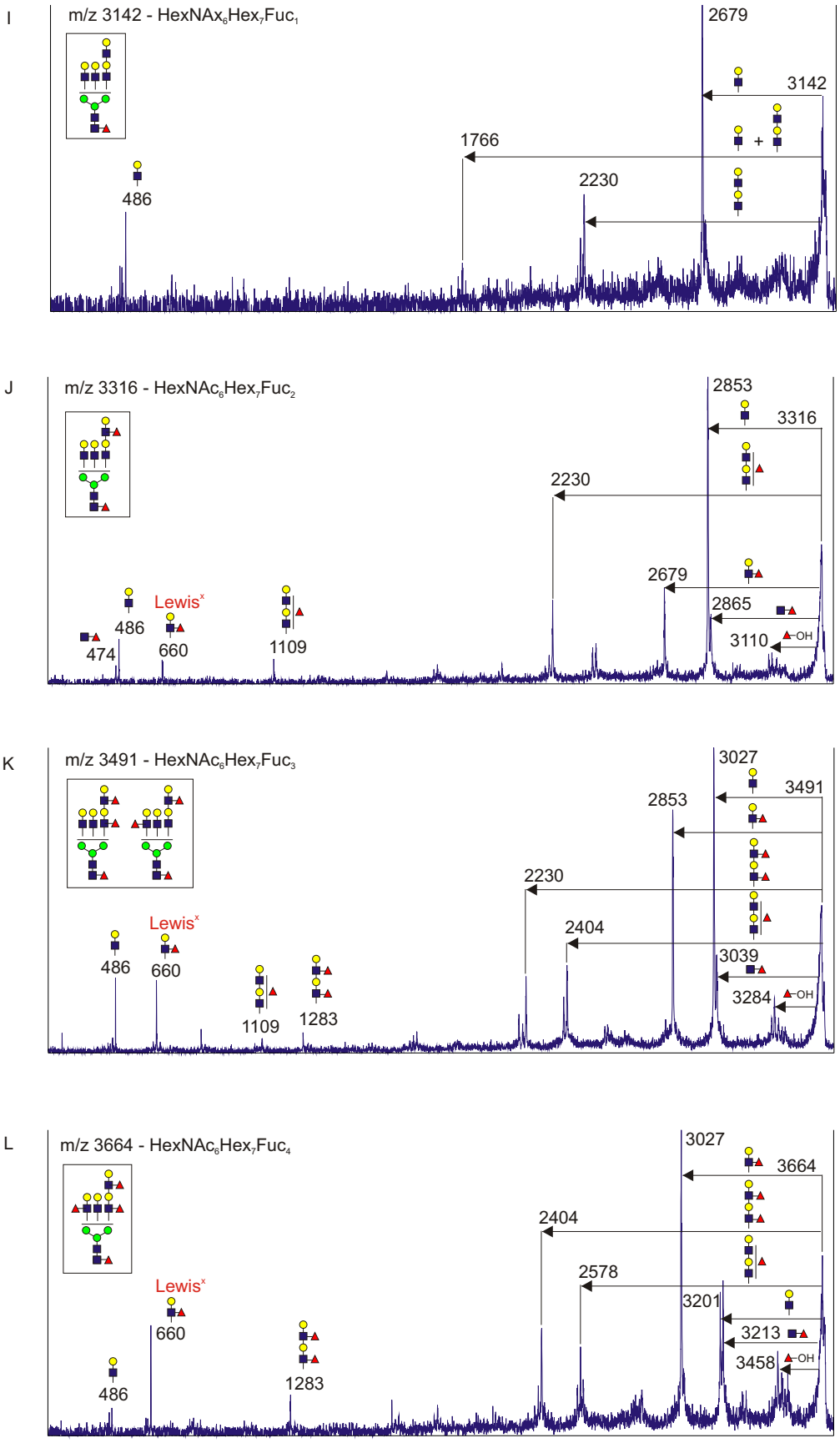
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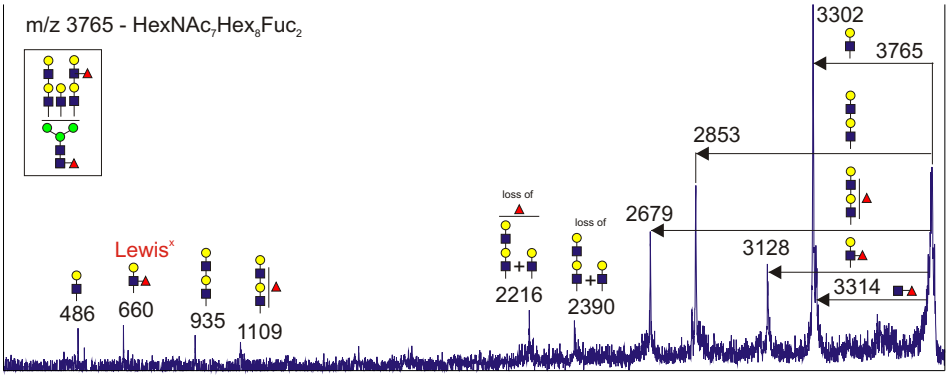
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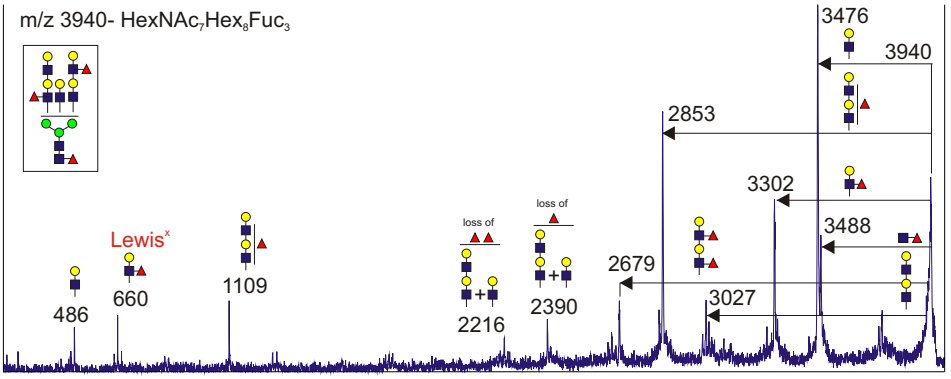
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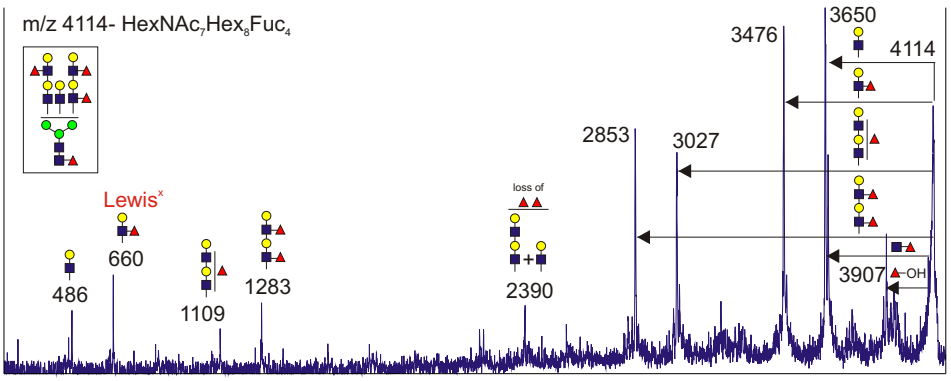
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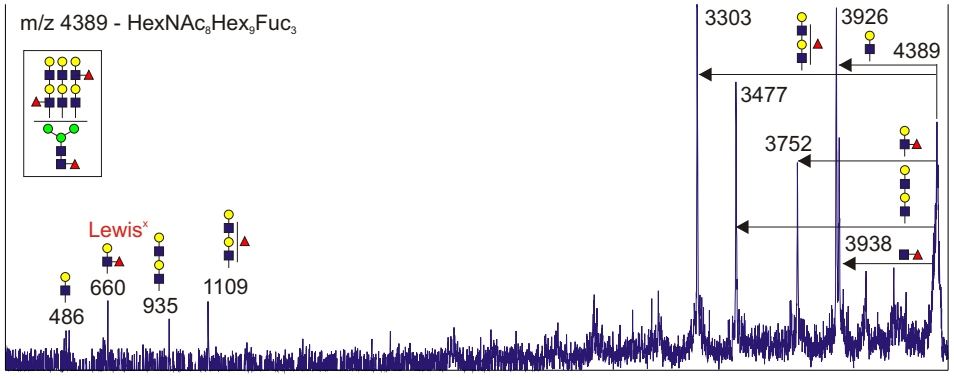
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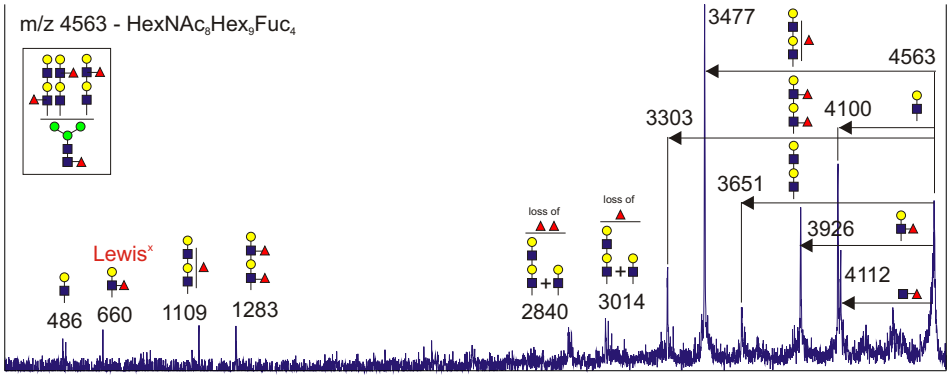
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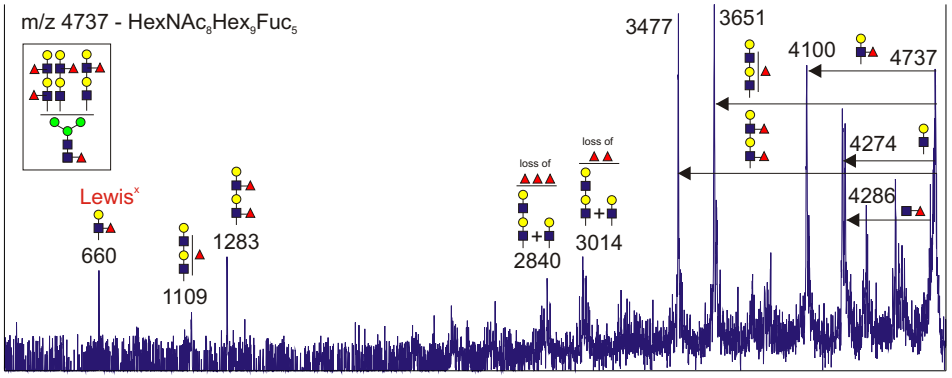
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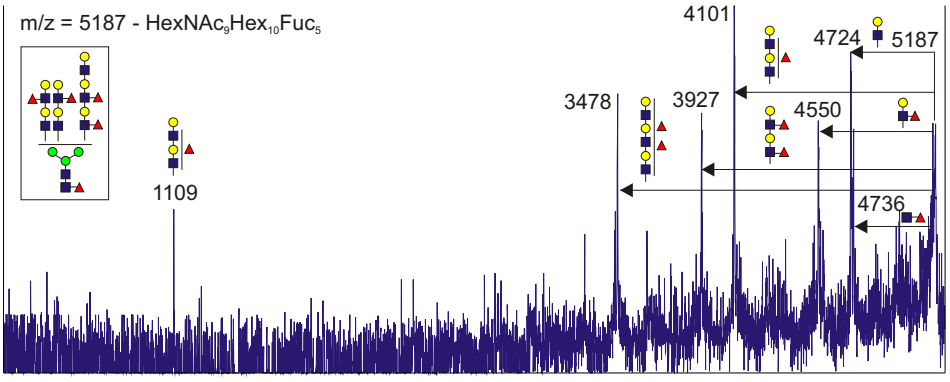
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Table S4: Detection of branching in neutrophil lactoferrin N-glycans by GC-MS linkage analysis.

Assignment	Characteristic fragment ions[a]	Peak area	% of total α-mannose
2-Mannose	87, 88, 100, 101, 129, 130, 161, 190	1136054	47.2
2,4-Mannose	113, 130, 173, 190, 233	489991	20.4
2,6-Mannose	87, 88, 99, 100, 129, 130, 189, 190	778855	32.4

[a] Electron impact fragment ions used for identification of the PMAA residues.

Table S5: Monosaccharide compositions of neutrophil lactoferrin N-glycans following endo-β-galactosidase digestion.
Truncated glycans produced by endo-β-galactosidase digestion are shown in red.

m/z values observed	Glycan composition
2244.3	$HexNAc_4Hex_5Fuc_1$
2285.3	$HexNAc_5Hex_4Fuc_1$
2418.4	$HexNAc_4Hex_5Fuc_2$
2489.4	$HexNAc_5Hex_5Fuc_1$
2592.5	$HexNAc_4Hex_5Fuc_3$
2605.4	$HexNAc_4Hex_5Fuc_1NeuAc_1$
2663.5	$HexNAc_5Hex_5Fuc_2$
2693.5	$HexNAc_5Hex_6Fuc_1$
2734.5	$HexNAc_6Hex_5Fuc_1$
2779.5	$HexNAc_4Hex_5Fuc_2NeuAc_1$
2867.6	$HexNAc_5Hex_6Fuc_2$
2908.6	$HexNAc_6Hex_5Fuc_2$
2938.6	$HexNAc_6Hex_6Fuc_1$
3041.7	$HexNAc_5Hex_6Fuc_3$
3112.7	$HexNAc_6Hex_6Fuc_2$
3142.7	$HexNAc_6Hex_7Fuc_1$
3228.8	$HexNAc_5Hex_6Fuc_2NeuAc_1$
3286.8	$HexNAc_6Hex_6Fuc_3$
3316.8	$HexNAc_6Hex_7Fuc_2$
3402.9	$HexNAc_5Hex_6Fuc_3NeuAc_1$
3490.9	$HexNAc_6Hex_7Fuc_3$
3665.0	$HexNAc_6Hex_7Fuc_4$
3736.0	$HexNAc_7Hex_7Fuc_3$
3766.0	$HexNAc_7Hex_8Fuc_2$
3852.1	$HexNAc_6Hex_7Fuc_3NeuAc_1$
3910.1	$HexNAc_7Hex_7Fuc_4$
3940.2	$HexNAc_7Hex_8Fuc_3$
4112.2	$HexNAc_7Hex_8Fuc_4$
4288.3	$HexNAc_7Hex_8Fuc_5$

Figure S3: Digestion of neutrophil lactoferrin N-glycans with endo-β-galactosidase. A, MALDI-MS profile of 50% acetonitrile fraction of neutrophil lactoferrin N-glycans following endo-β-galactosidase digestion. Molecular ions resulting from endo-β-galactosidase digestion are shown in red. Putative structures are based on composition, tandem mass spectrometry and knowledge of biosynthetic pathways. Other peaks are the same as those shown in Fig. 6A and are resistant to endo-β-galactosidase cleavage. B, MALDI-MS profile of 35% acetonitrile fraction of neutrophil lactoferrin N-glycans following digestion with endo-β-galactosidase. Annotated peaks indicate fragments released from glycan antennae.

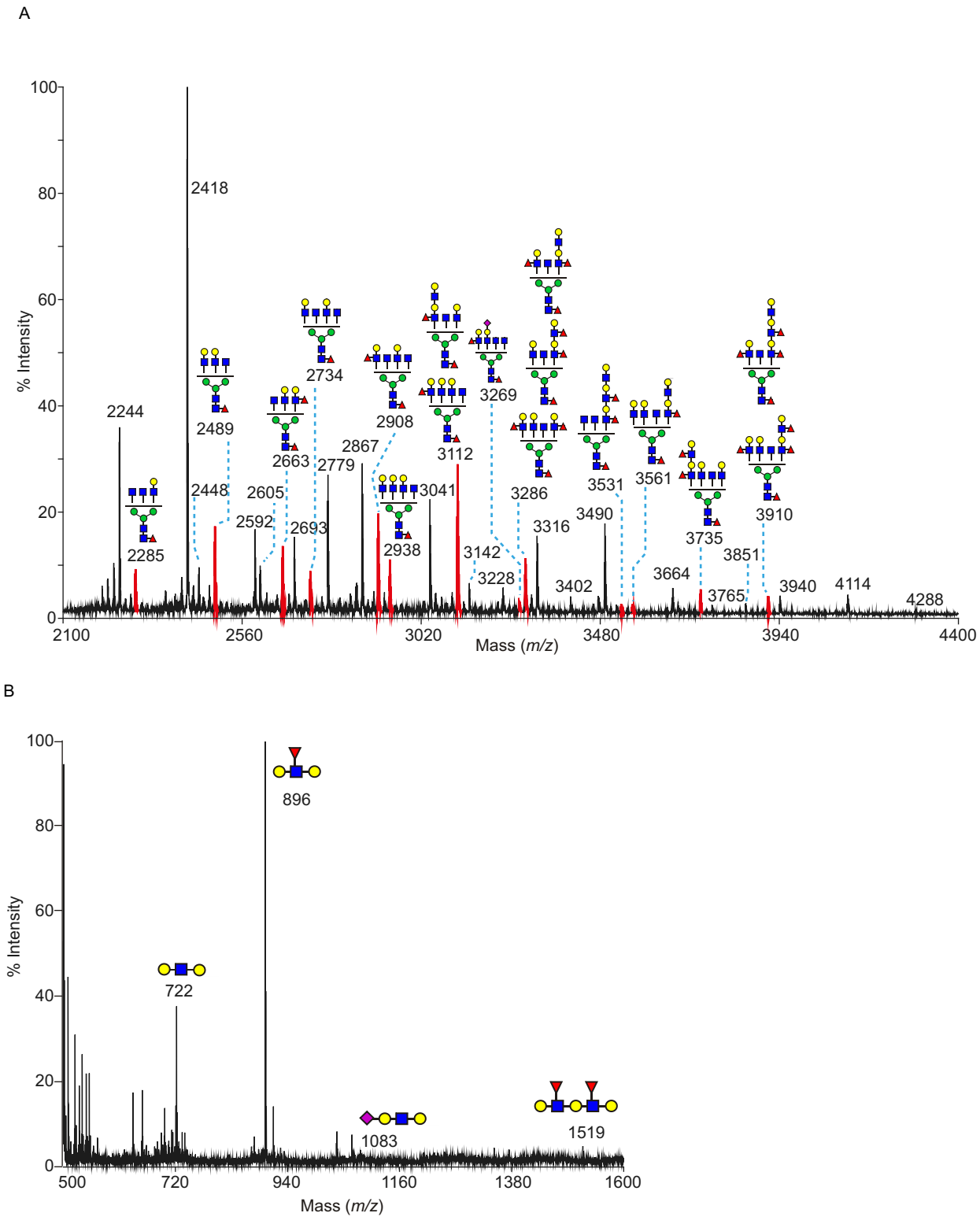


Figure S4: MALDI-MS profile of neutrophil lactoferrin N-glycans following HF treatment. Structures of the glycans resulting from HF treatment were deduced by MS/MS analysis. *M* denotes major components and *m* denotes minor components.

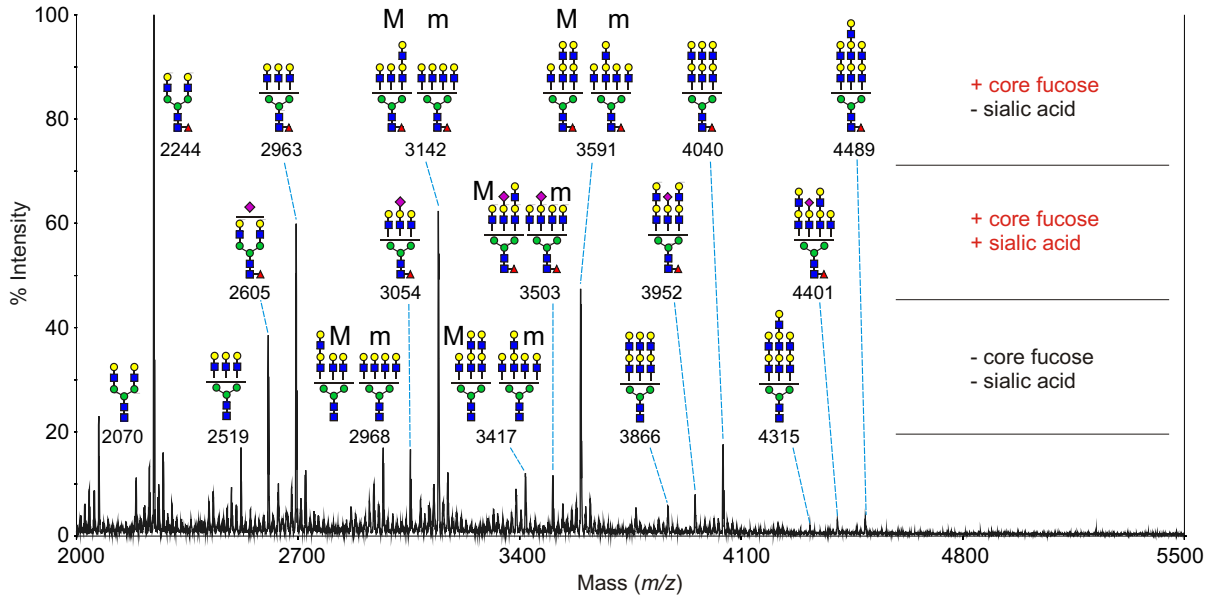


Table S6: Monosaccharide compositions of neutrophil lactoferrin N-glycans following HF treatment.

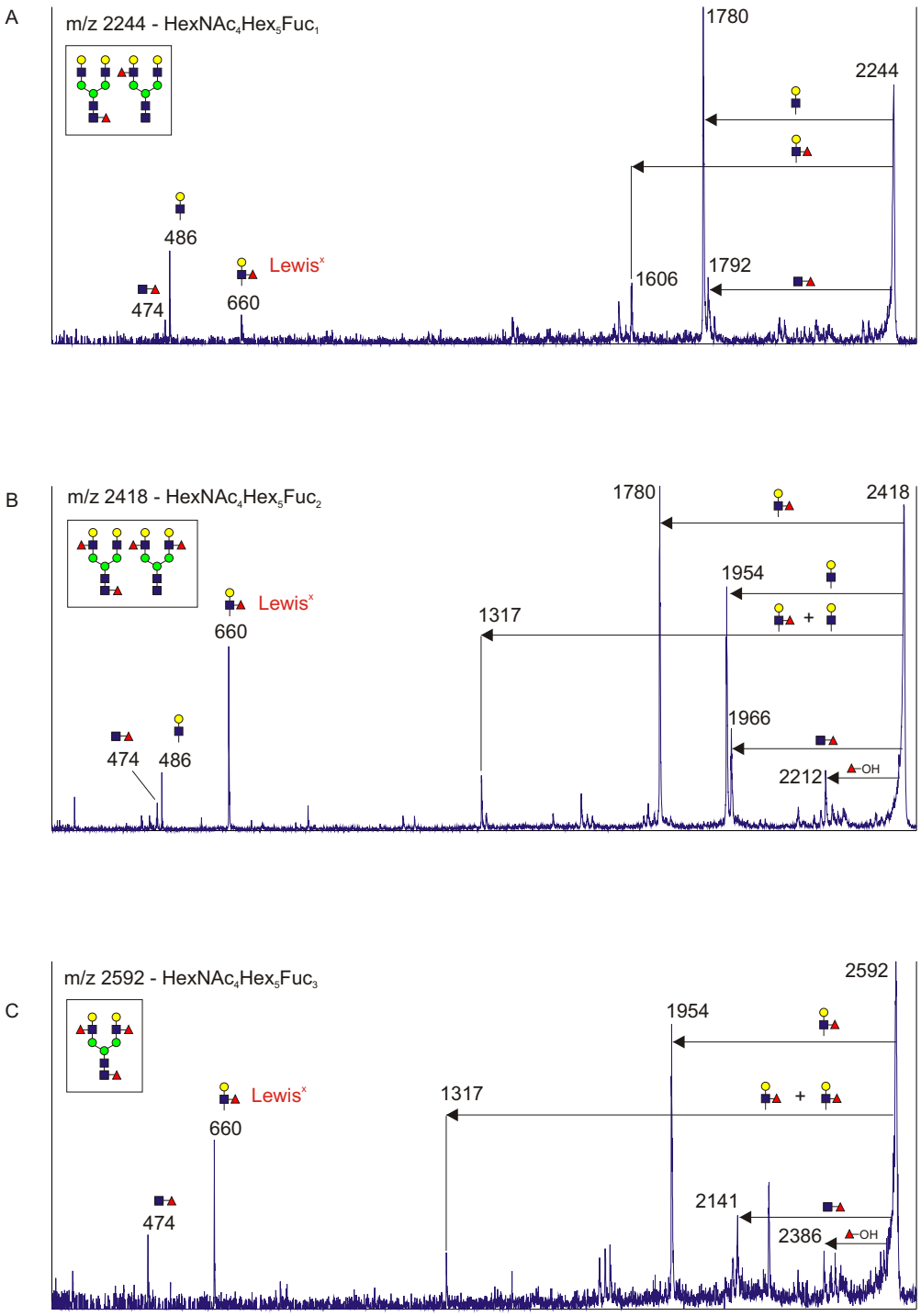
m/z values observed	Glycan composition
2070.0	$HexNAc_4Hex_5$
2244.1	$HexNAc_4Hex_5Fuc_1$
2519.3	$HexNAc_5Hex_6$
2605.3	$HexNAc_4Hex_5Fuc_1NeuAc_1$
2693.4	$HexNAc_5Hex_6Fuc_1$
2968.5	$HexNAc_6Hex_7$
3054.5	$HexNAc_5Hex_6Fuc_1NeuAc_1$
3142.6	$HexNAc_6Hex_7Fuc_1$
3417.7	$HexNAc_7Hex_8$
3503.8	$HexNAc_6Hex_7Fuc_1NeuAc_1$
3591.8	$HexNAc_7Hex_8Fuc_1$
3867.0	$HexNAc_8Hex_9$
3953.0	$HexNAc_7Hex_8Fuc_1NeuAc_1$
4041.1	$HexNAc_8Hex_9Fuc_1$
4402.2	$HexNAc_8Hex_9Fuc_1NeuAc_1$
4490.3	$HexNAc_9Hex_{10}Fuc_1$

Table S7: Determination of sialic acid linkage in neutrophil lactoferrin N-glycans by GC-MS linkage analysis.

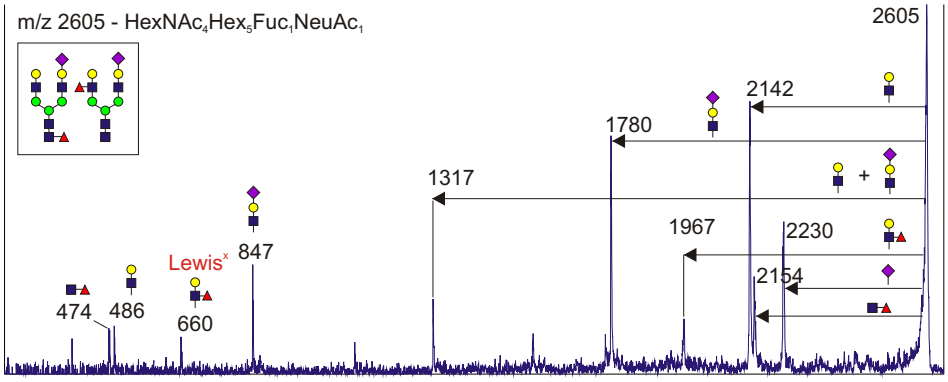
Assignment		Peak area relative to 3,6-linked mannose[b]		
	Characteristic fragment ions[a]	Untreated	Sialidase A	Untreated-Sialidase A
3-linked galactose	101, 118, 129, 143, 161, 174, 190, 203, 217, 234, 277	0.734	0.515	0.216 = 42%
6-linked galactose	99, 102, 118, 129, 159, 162, 173, 189, 233	0.298	0.000	0.298 = 58%

[a] Electron impact fragment ions used for identification of the PMAA residues.
[b] Ratios are expressed as follows: the integrated area peak of the extracted ion current (XIC) chromatogram of a specific residue was divided with the sum of the integrated area peak of the XIC chromatogram of 3,6-linked mannose.

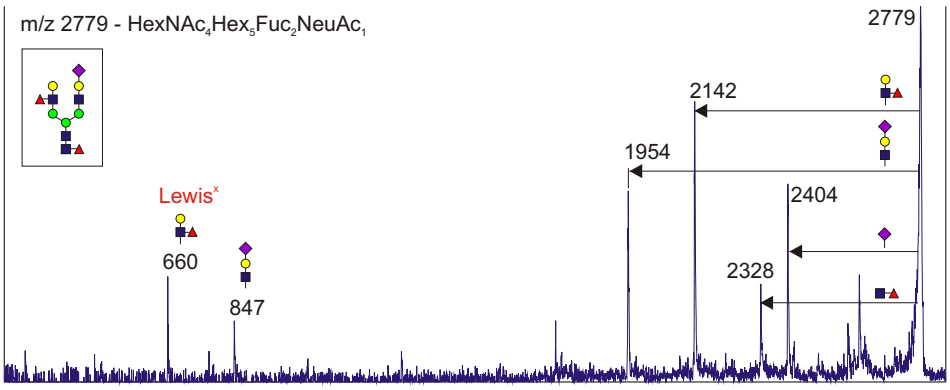
Figure S5: MS/MS analysis of milk lactoferrin N-glycans.



D


m/z 2605 - HexNAc4Hex5Fuc1NeuAc1
2605
2142
1780
1317
1967
2230
2154
847
Lewis^x
474
486
660

E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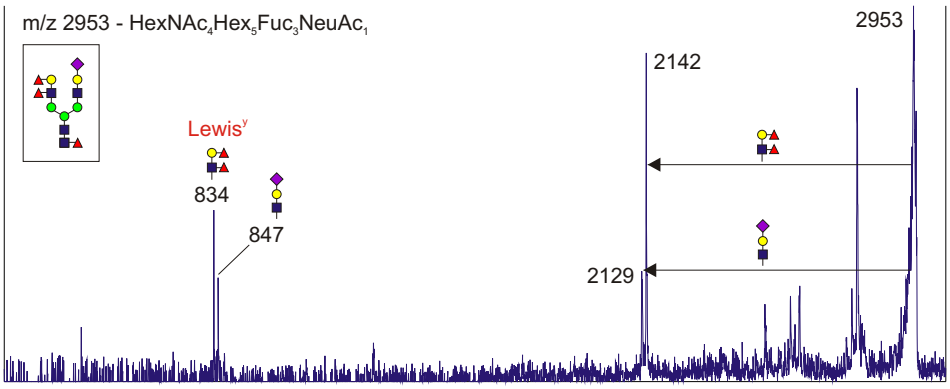
2779
2142
1954
2404
2328
Lewis^x
660
847

F


m/z 2953 - HexNAc4Hex5Fuc3NeuAc1
2953
2142
Lewis^y
834
847
2129

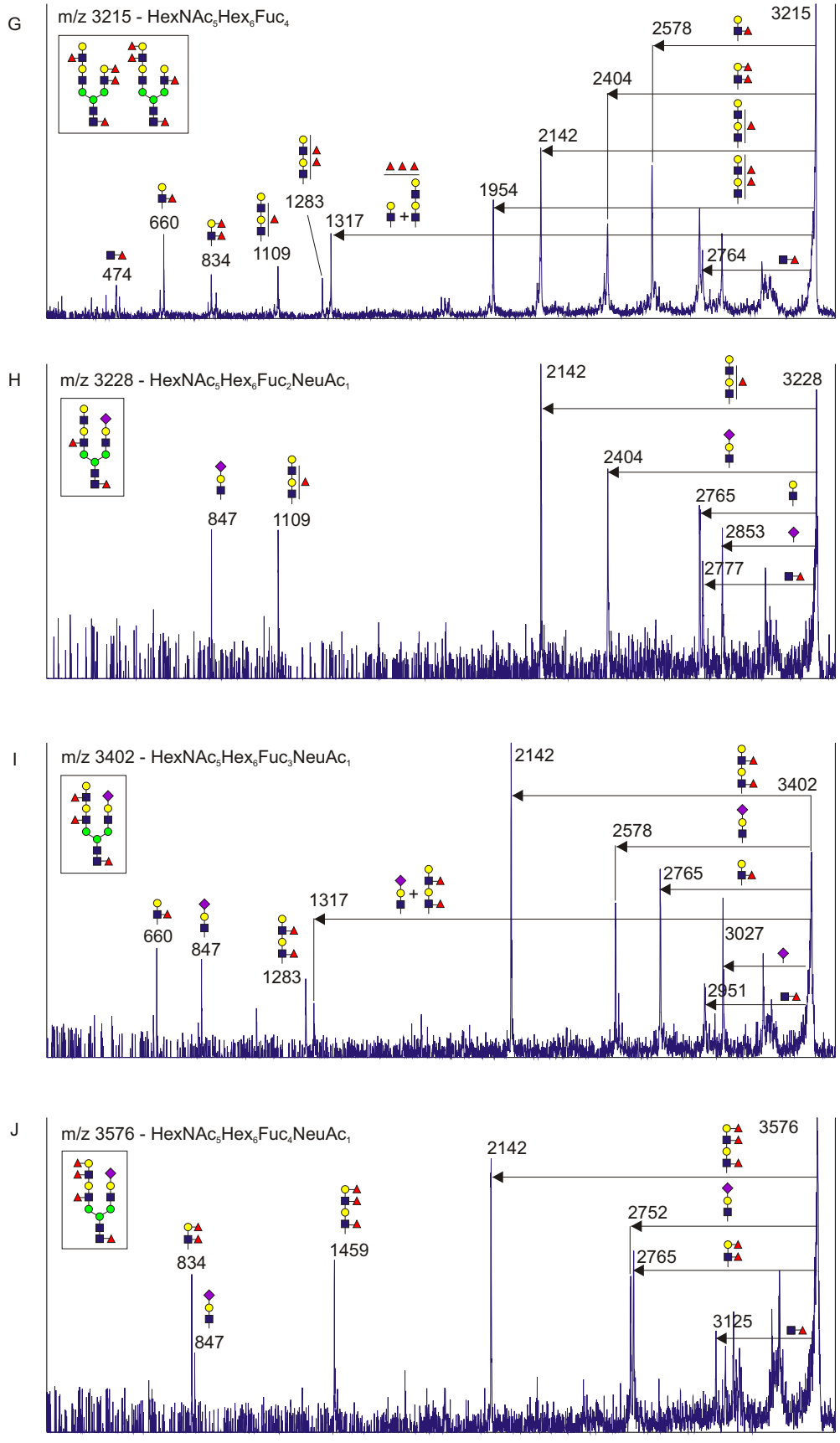

G
m/z 3215 - HexNAc5Hex6Fuc4
3215
2578
2404
2142
1954
1283
1317
660
834
1109
474
2764
H
m/z 3228 - HexNAc5Hex6Fuc2NeuAc1
3228
2142
2404
2765
2853
2777
847
1109
I
m/z 3402 - HexNAc5Hex6Fuc3NeuAc1
3402
2142
2578
2765
1317
3027
660
847
1283
2951
J
m/z 3576 - HexNAc5Hex6Fuc4NeuAc1
3576
2142
2752
2765
1459
834
847
3125

Table S8: Monosaccharide compositions of N-glycans from milk lactoferrin.

m/z values observed	Glycan composition
2070.0	$HexNAc_4Hex_5$
2244.1	$HexNAc_4Hex_5Fuc_1$
2418.2	$HexNAc_4Hex_5Fuc_2$
2431.2	$HexNAc_4Hex_5NeuAc_1$
2592.3	$HexNAc_4Hex_5Fuc_3$
2605.3	$HexNAc_4Hex_5Fuc_1NeuAc_1$
2779.4	$HexNAc_4Hex_5Fuc_2NeuAc_1$
2867.1	$HexNAc_5Hex_6Fuc_2$
2953.5	$HexNAc_4Hex_5Fuc_3NeuAc_1$
2966.5	$HexNAc_4Hex_5Fuc_1NeuAc_2$
3041.5	$HexNAc_5Hex_6Fuc_3$
3055.2	$HexNAc_5Hex_6Fuc_1NeuAc_1$
3215.6	$HexNAc_5Hex_6Fuc_4$
3228.6	$HexNAc_5Hex_6Fuc_2NeuAc_1$
3389.7	$HexNAc_5Hex_6Fuc_5$
3402.7	$HexNAc_5Hex_6Fuc_3NeuAc_1$
3576.8	$HexNAc_5Hex_6Fuc_4NeuAc_1$
3677.8	$HexNAc_6Hex_7Fuc_2NeuAc_1$
3851.9	$HexNAc_6Hex_7Fuc_3NeuAc_1$
4026.0	$HexNAc_6Hex_7Fuc_4NeuAc_1$

Table S9: Monosaccharide compositions of N-glycans from SRCL non-binding fraction of neutrophil lactoferrin.
Glycans that were not detected in the total glycan pool but which were enriched by isolation of the non-binding fraction are shown in red.

m/z values observed	Glycan composition
2244.1	$HexNAc_4Hex_5Fuc_1$
2418.2	$HexNAc_4Hex_5Fuc_2$
2592.3	$HexNAc_4Hex_5Fuc_3$
2605.3	$HexNAc_4Hex_5Fuc_1NeuAc_1$
2693.3	$HexNAc_5Hex_6Fuc_1$
2779.4	$HexNAc_4Hex_5Fuc_2NeuAc_1$
2867.4	$HexNAc_5Hex_6Fuc_2$
2966.5	$HexNAc_4Hex_5Fuc_1NeuAc_2$
3041.6	$HexNAc_5Hex_6Fuc_3$
3054.6	$HexNAc_5Hex_6Fuc_1NeuAc_1$
3142.6	$HexNAc_6Hex_7Fuc_1$
3228.6	$HexNAc_5Hex_6Fuc_2NeuAc_1$
3316.6	$HexNAc_6Hex_7Fuc_2$
3490.7	$HexNAc_6Hex_7Fuc_3$
3591.7	$HexNAc_7Hex_8Fuc_1$
3677.8	$HexNAc_6Hex_7Fuc_2NeuAc_1$
3765.6	$HexNAc_7Hex_8Fuc_2$
3940.0	$HexNAc_7Hex_8Fuc_3$

Table S10: Monosaccharide compositions of N-glycans from SRCL binding fraction of neutrophil lactoferrin.

m/z values observed	Glycan composition
2244.0	$HexNAc_4Hex_5Fuc_1$
2418.1	$HexNAc_4Hex_5Fuc_2$
2592.3	$HexNAc_4Hex_5Fuc_3$
2693.3	$HexNAc_5Hex_6Fuc_1$
2779.4	$HexNAc_4Hex_5Fuc_2NeuAc_1$
2867.4	$HexNAc_5Hex_6Fuc_2$
3041.5	$HexNAc_5Hex_6Fuc_3$
3215.4	$HexNAc_5Hex_6Fuc_4$
3230.4	$HexNAc_5Hex_6Fuc_2NeuAc_1$
3316.6	$HexNAc_6Hex_7Fuc_2$
3402.7	$HexNAc_5Hex_6Fuc_3NeuAc_1$
3490.7	$HexNAc_6Hex_7Fuc_3$
3664.8	$HexNAc_6Hex_7Fuc_4$
3765.9	$HexNAc_7Hex_8Fuc_2$
3851.9	$HexNAc_6Hex_7Fuc_3NeuAc_1$
3940.0	$HexNAc_7Hex_8Fuc_3$
4114.0	$HexNAc_7Hex_8Fuc_4$
4288.1	$HexNAc_7Hex_8Fuc_5$
4301.1	$HexNAc_7Hex_8Fuc_3NeuAc_1$
4389.1	$HexNAc_8Hex_9Fuc_3$
4476.2	$HexNAc_7Hex_8Fuc_4NeuAc_1$
4563.2	$HexNAc_8Hex_9Fuc_4$
4737.3	$HexNAc_8Hex_9Fuc_5$

Table S11: Human tissue array.

Core	Age	Sex	Organ	Core	Age	Sex	Organ
1	60	F	Skin	31	77	M	Small bowel
2	43	F	Skin	32	56	M	Smal bowel
3	49	F	Subcutis	33	72	F	Appendix
4	53	F	Breast	34	72	F	Colon
5	43	F	Breast	35	71	M	Colon
6	63	M	Spleen	36	49	F	Rectum
7	53	F	Spleen	37	34	M	Kidney cortex
8	49	M	Lymph node	38	44	F	Kidney cortex
9	46	M	Lymph node	39	34	M	Kidney medulla
10	61	M	Skeletal muscle	40	53	M	Urinary bladder
11	25	M	Nasal musosa	41	47	M	Prostate
12	55	M	Lung	42	59	M	Prostate
13	42	F	Lung	43	59	M	Seminal vesicle
14	69	F	Bronchus	44	72	M	Testis
15	58	M	Heart	45	42	F	Endometrium, proliferative
16	50	M	Salivary gland	46	41	F	Endometrium, secretory
17	56	M	Liver	47	53	F	Myometrium
18	53	F	Liver	48	42	F	Uterine cervix
19	42	F	Liver	49	53	F	Salpinx
20	64	M	Gallbladder	50	39	F	Ovary
21	63	M	Pancreas	51	30	F	Placenta
22	62	M	Pancreas	52	?	F	Placenta
23	33	F	Tonsil	53	30	F	Umbilical cord
24	54	M	Esophagus	54	59	M	Adrenal gland
25	74	M	Esophagus	55	39	M	Thyroid
26	42	M	Stomach, body	56	20	F	Thymus
27	49	F	Stomach, body	57	0	F	Brain, white matter
28	40	M	Stomach, antrum	58	0	F	Brain, grey matter
29	36	M	Stomach, smooth muscle	59	0	F	Cerebellum
30	57	F	Duodenum				