

### Supplementary Table 3

List of representative peaks of N-glycans by MALDI-TOF-MS analysis in MDCK cell line

Composition	Mass (m/z)	Non %	MDCK		Remarks
			NeuA %	NeuS %	
Hex <sub>5</sub> HexNAc <sub>2</sub>	1580	50.03	31.46	34.12	
Hex <sub>6</sub> HexNAc <sub>2</sub>	1784	57.73	44.64	41.02	
Fuc <sub>1</sub> Hex <sub>3</sub> HexNAc <sub>4</sub>	1836	8.11	5.95	4.41	
Hex <sub>7</sub> HexNAc <sub>2</sub>	1988	65.65	58.32	51.89	
Hex <sub>6</sub> HexNAc <sub>3</sub>	2029	1.50	10.61	3.63	
Hex <sub>5</sub> HexNAc <sub>4</sub>	2070	5.64	16.66	8.65	
Fuc <sub>1</sub> Hex <sub>3</sub> HexNAc <sub>5</sub>	2081	7.00	1.63	2.81	
Hex <sub>8</sub> HexNAc <sub>2</sub>	2192	93.62	90.09	87.88	
Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>4</sub>	2244	5.61	35.74*	17.11*	*Desialylated product
Hex <sub>9</sub> HexNAc <sub>2</sub>	2396	100.00	100.00	100.00	<b>Relative intensity</b>
Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>4</sub>	2448	2.87	5.97	4.02	
Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>5</sub>	2489	6.20	24.64*	9.44*	*Desialylated product
Hex <sub>6</sub> HexNAc <sub>5</sub>	2519	2.12	10.32	3.14	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>4</sub>	2605	6.23	0.05**	3.72	** $\alpha$ 2,6-Sia
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>4</sub> NeuAc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>4</sub>	2635	7.35	0.07	1.49	
Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>5</sub>	2693	6.63	42.03*	16.83*	*Desialylated product
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>4</sub>	2809	13.34	0.03**	3.80	** $\alpha$ 2,6-Sia
Fuc <sub>2</sub> Hex <sub>6</sub> HexNAc <sub>5</sub>	2867	8.98	10.51	6.94	
Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>5</sub>	2897	1.25	12.7*	5.98*	*Desialylated product
Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>6</sub>	2938	1.70	24.30*	11.87*	*Desialylated product
NeuAc <sub>2</sub> Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>4</sub>	2966	7.42	0.03	0.17**	** $\alpha$ 2,3- and $\alpha$ 2,6-Sia
Hex <sub>7</sub> HexNAc <sub>6</sub>	2968	1.11	9.27	4.32	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>5</sub>	3054	8.16	0.04**	5.32	** $\alpha$ 2,6-Sia
Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	3143	2.75	82.28*	55.00*	*Desialylated product
NeuAc <sub>2</sub> Fuc <sub>1</sub> Hex <sub>5</sub> HexNAc <sub>5</sub>	3212	5.27	0.06	0.06	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>6</sub>	3299	2.64	0.04	0.25	
Fuc <sub>2</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	3316	1.90	9.88	6.80	
Fuc <sub>1</sub> Hex <sub>8</sub> HexNAc <sub>6</sub>	3347	4.40	28.02*	10.86*	*Desialylated product
Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>7</sub>	3388	0.67	19.02*	8.35*	*Desialylated product
NeuAc <sub>2</sub> Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>5</sub>	3416	1.94	0.06	0.15	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	3503	3.88	0.05**	5.59	** $\alpha$ 2,6-Sia
Fuc <sub>1</sub> Hex <sub>8</sub> HexNAc <sub>7</sub>	3592	0.38	27.48*	9.14*	*Desialylated product
NeuAc <sub>2</sub> Fuc <sub>1</sub> Hex <sub>6</sub> HexNAc <sub>6</sub>	3661	1.93	0.15	0.05	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>8</sub> HexNAc <sub>6</sub>	3708	2.46	0.08**	2.04	** $\alpha$ 2,6-Sia
Fuc <sub>2</sub> Hex <sub>8</sub> HexNAc <sub>7</sub>	3766	1.91	10.91	5.59	
Fuc <sub>1</sub> Hex <sub>9</sub> HexNAc <sub>7</sub>	3796	2.34	18.28*	6.05	*Desialylated product
NeuAc <sub>2</sub> Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	3865	6.38	0.51	0.04**	** $\alpha$ 2,3- and $\alpha$ 2,6-Sia
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>8</sub> HexNAc <sub>7</sub>	3953	2.06	0.10	0.53	
Fuc <sub>2</sub> Hex <sub>9</sub> HexNAc <sub>7</sub>	3970	1.36	5.86	3.45	
Fuc <sub>1</sub> Hex <sub>10</sub> HexNAc <sub>7</sub>	4000	0.68	3.31	0.59	
Fuc <sub>1</sub> Hex <sub>9</sub> HexNAc <sub>8</sub>	4041	0.91	8.61*	2.33*	*Desialylated product

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Composition	Mass (m/z)	Non %	MDCK		Remarks
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NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>9</sub> HexNAc <sub>7</sub>	4157	1.41	0.05	0.88	
Fuc <sub>2</sub> Hex <sub>9</sub> HexNAc <sub>8</sub>	4215	0.73	3.83	1.22	
NeuAc <sub>3</sub> Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	4226	2.27	0.03**	0.12**	** $\alpha$ 2,3- and $\alpha$ 2,6-Sia
Fuc <sub>1</sub> Hex <sub>10</sub> HexNAc <sub>8</sub>	4246	0.27	2.05	1.54	
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>9</sub> HexNAc <sub>8</sub>	4403	0.93	0.19	0.53	
Fuc <sub>2</sub> Hex <sub>10</sub> HexNAc <sub>8</sub>	4420	0.42	0.75	0.67	
Fuc <sub>1</sub> Hex <sub>10</sub> HexNAc <sub>9</sub>	4491	0.56	1.13	0.54	
NeuAc <sub>4</sub> Fuc <sub>1</sub> Hex <sub>7</sub> HexNAc <sub>6</sub>	4587	3.04	0.02**	0.04**	** $\alpha$ 2,3- and $\alpha$ 2,6-Sia
NeuAc <sub>1</sub> Fuc <sub>1</sub> Hex <sub>10</sub> HexNAc <sub>8</sub>	4607	0.56	0.03	0.52	
Fuc <sub>2</sub> Hex <sub>10</sub> HexNAc <sub>9</sub>	4665	0.10	0.36	0.05	
NeuAc <sub>3</sub> Fuc <sub>1</sub> Hex <sub>8</sub> HexNAc <sub>7</sub>	4675	1.74	0.02	0.05	
Fuc <sub>1</sub> Hex <sub>11</sub> HexNAc <sub>9</sub>	4696	0.07	0.38	0.16	
Fuc <sub>1</sub> Hex <sub>11</sub> HexNAc <sub>10</sub>	4939	0.24	0.14	0.08	
Fuc <sub>1</sub> Hex <sub>12</sub> HexNAc <sub>10</sub>	5145	0.05	0.04	0.05	
Fuc <sub>1</sub> Hex <sub>12</sub> HexNAc <sub>11</sub>	5388	0.09	0.09	0.03	
Fuc <sub>1</sub> Hex <sub>13</sub> HexNAc <sub>11</sub>	5595	0.01	0.02	0.02	