

**Supplementary Table 1.** Glycan probes included in the microarray and the binding signals with murine Fc-MelLec and FLAG-tagged human Langerin. The signals are means of fluorescence intensities of duplicate spots, printed at 5 fmol per spot level; errors represented half of the difference between the two values.

| Position | Probe               | Structure  | MelLec                 |       | Langerin               |       |
|----------|---------------------|--|------------------------|-------|------------------------|-------|
|          |                     |  | Fluorescence intensity | Error | Fluorescence intensity | Error |
| 1        | Galactocerebrosides | Gal $\beta$ -Cer                                     | 179                    | 330   | 36                     | 43    |
| 2        | H-Di                | Fuc $\alpha$ -2Gal                                   | 15                     | 19    | -                      | 8     |
| 3        | A-Tri               | GalNAc $\alpha$ -3Gal<br> <br>Fuc $\alpha$ -2        | 98                     | 234   | -                      | 13    |
| 4        | B-Tri               | Gal $\alpha$ -3Gal<br> <br>Fuc $\alpha$ -2           | 28                     | 151   | 91                     | 7     |
| 5        | B-Tri-AO            | Gal $\alpha$ -3Gal-AO<br> <br>Fuc $\alpha$ -2        | -                      | 266   | 33,169                 | 2,874 |
| 6        | GSC-426             | 3-deoxy, 3-carboxymethyl-Gal $\beta$ -C30            | 233                    | 50    | -                      | 30    |
| 7        | Sulfatide           | SU-3Gal $\beta$ -Cer                                 | 122                    | 57    | -                      | 9     |
| 8        | GSF-1               | SU-3Gal $\beta$ -C30                                 | -                      | 146   | 27                     | 35    |
| 9        | GSC-209             | GlcA $\beta$ -3Gal $\beta$ -Cer42                    | 111                    | 160   | 9                      | 56    |
| 10       | GSC-210             | SU-3GlcA $\beta$ -3Gal $\beta$ -Cer42                | 99                     | 64    | -                      | 1     |
| 11       | GSC-187             | NeuAc $\alpha$ -3Gal $\beta$ -C29                    | -                      | 101   | -                      | 44    |
| 12       | GSC-40              | NeuAc $\alpha$ - (S) -3Gal $\beta$ -Cer42            | 50                     | 150   | -                      | 29    |
| 13       | GSC-230             | NeuAc $\alpha$ -8NeuAc $\alpha$ -3Gal $\beta$ -Cer36 | -                      | 159   | -                      | 40    |
| 14       | GSC-27              | NeuAc $\alpha$ -6Gal $\beta$ -Cer36                  | 158                    | 13    | 7                      | 29    |
| 15       | GSC-144             | KDN $\alpha$ -6Gal $\beta$ -Cer36                    | 28                     | 126   | 27                     | 6     |
| 16       | GSC-13              | NeuAc $\alpha$ - (S) -6Gal $\beta$ -Cer36            | 2                      | 44    | 16                     | 7     |
| 17       | GSC-72              | NeuAc $\alpha$ - (S) -6Gal $\beta$ - (S) -Cer36      | 184                    | 78    | -                      | 23    |
| 18       | GSC-231             | NeuAc $\alpha$ -8NeuAc $\alpha$ -6Gal $\beta$ -Cer36 | 110                    | 260   | 30                     | 32    |

|    |                                     |  |     |     |     |    |
|----|-------------------------------------|--|-----|-----|-----|----|
| 19 | GSC-439                             | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -6Gal $\beta$ -Cer36            | 61  | 16  | -   | 23 |
| 20 | Glucocerebrosides                   | Glc $\beta$ -Cer   | -   | 234 | 29  | 4  |
| 21 | GSF-19                              | SU-6Glc $\beta$ -C30   | -   | 58  | 27  | 18 |
| 22 | GSC-60                              | NeuAc $\alpha$ -6Glc $\beta$ -Cer36  | -   | 67  | -   | 7  |
| 23 | GSC-9                               | NeuAc $\alpha$ - (S) -6Glc $\beta$ -Cer36  | 7   | 52  | 4   | 82 |
| 24 | GSC-62                              | NeuAc $\alpha$ -2Glc $\beta$ -Cer36  | -   | 62  | 9   | 11 |
| 25 | GSC-59                              | NeuAc $\alpha$ -6GlcNAc $\beta$ -Cer36   | -   | 97  | 7   | 45 |
| 26 | GSC-95                              | NeuAc $\alpha$ - (S) -6GlcNAc $\beta$ -Cer36                                     | 12  | 21  | 18  | 24 |
| 27 | GSC-232                             | NeuAc $\alpha$ -8NeuAc $\alpha$ -6Glc $\beta$ -Cer36                             | -   | 158 | -   | 9  |
| 28 | Lactocerebrosides                   | Gal $\beta$ -4Glc $\beta$ -Cer   | -   | 15  | -   | 2  |
| 29 | Lac                                 | Gal $\beta$ -4Glc  | -   | 334 | 137 | 59 |
| 30 | Lac-AO                              | Gal $\beta$ -4Glc-AO   | -   | 144 | -   | 15 |
| 31 | GSC-432                             | 3-deoxy, 3-carboxymethyl-Gal $\beta$ -4Glc $\beta$ -C30                          | -   | 59  | -   | 41 |
| 32 | GSC-296                             | GlcA $\beta$ -3Gal $\beta$ -4Glc $\beta$ -C30                                    | 102 | 9   | 77  | 26 |
| 33 | GSC-353                             | SU-3GlcA $\beta$ -3Gal $\beta$ -4Glc $\beta$ -C30                                | -   | 49  | 241 | 34 |
| 34 | GalNAc $\alpha$ -3Gal $\beta$ -4Glc | GalNAc $\alpha$ -3Gal $\beta$ -4Glc  | -   | 35  | 53  | 28 |
| 35 | Globotri-AO                         | Gal $\alpha$ -4Gal $\beta$ -4Glc $\beta$ -AO                                     | -   | 159 | 8   | 21 |
| 36 | Ceramide trihexoside                | Gal $\alpha$ -4Gal $\beta$ -4Glc $\beta$ -Cer                                    | -   | 54  | 47  | 5  |
| 37 | Globoside (P-antigen)               | GalNAc $\beta$ -3Gal $\alpha$ -4Gal $\beta$ -4Glc $\beta$ -Cer                   | -   | 67  | -   | 30 |
| 38 | Forssmann glycolipid                | GalNAc $\alpha$ -3GalNAc $\beta$ -3Gal $\alpha$ -4Gal $\beta$ -4Glc $\beta$ -Cer | -   | 78  | 60  | 45 |

|    |                            |   |     |     |     |     |
|----|----------------------------|---|-----|-----|-----|-----|
| 39 | Fuc(3)-Lac-AO              | Gal $\alpha$ -4Gal-AO<br> <br>Fuc $\alpha$ -3                                   | -   | 232 | -   | 18  |
| 40 | GSC-430                    | 3-deoxy, 3-carboxymethyl-Gal $\beta$ -3Glc $\beta$ -C30<br> <br>Fuc $\alpha$ -4 | -   | 7   | -   | 35  |
| 41 | GSC-260                    | 3-deoxy, 3-carboxymethyl-Gal $\beta$ -4Glc $\beta$ -C30<br> <br>Fuc $\alpha$ -3 | 48  | 46  | 38  | 28  |
| 42 | GSC-150                    | SU-3Gal $\beta$ -4Glc $\beta$ -C30<br> <br>Fuc $\alpha$ -3                      | -   | 123 | 160 | 19  |
| 43 | GSC-160                    | SU-3Gal $\beta$ -4Glc $\beta$ -Cer36<br> <br>Fuc $\alpha$ -3                    | 137 | 117 | 437 | 62  |
| 44 | NeuAc $\alpha$ -(3')Lac    | NeuAc $\alpha$ -3Gal $\beta$ -4Glc  | -   | 146 | -   | 34  |
| 45 | NeuAc $\alpha$ -(3')Lac-AO | NeuAc $\alpha$ -3Gal $\beta$ -4Glc-AO   | -   | 221 | -   | 14  |
| 46 | Neu4,5Ac-(3')Lac           | Neu4,5Ac $\alpha$ -3Gal $\beta$ -4Glc   | -   | 103 | -   | 47  |
| 47 | Neu4,5Ac-(3')Lac-AO        | Neu4,5Ac $\alpha$ -3Gal $\beta$ -4Glc-AO  | -   | 151 | -   | 33  |
| 48 | GSC-16                     | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer32                               | 301 | 57  | 14  | 42  |
| 49 | GSC-178                    | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer34                               | 355 | 20  | 44  | 42  |
| 50 | GSC-17                     | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                               | 63  | 28  | 62  | 81  |
| 51 | GSC-18                     | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer42                               | 5   | 217 | 31  | 9   |
| 52 | GSC-197                    | KDN $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer28                                 | 80  | 117 | -   | 81  |
| 53 | GSC-199                    | KDN $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -C30                                   | -   | 12  | -   | 50  |
| 54 | GSC-198                    | KDN $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer34                                 | 42  | 229 | -   | 44  |
| 55 | GSC-75                     | (4-deoxy) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                     | -   | 42  | 23  | 16  |
| 56 | GSC-76                     | (7-deoxy) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                     | 46  | 96  | -   | 83  |
| 57 | GSC-77                     | (8-deoxy) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                     | 15  | 191 | 20  | 30  |
| 58 | GSC-153                    | (4,8-deoxy) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                   | 62  | 114 | 102 | 112 |

|    |                            |   |     |     |     |    |
|----|----------------------------|---|-----|-----|-----|----|
| 59 | GSC-51                     | (9-deoxy) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                         | -   | 63  | 4   | 41 |
| 60 | GSC-78                     | (4-OMe) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                           | -   | 13  | -   | 34 |
| 61 | GSC-79                     | (9-OMe) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                           | -   | 59  | 10  | 63 |
| 62 | GSC-23                     | (C7) NeuAc $\alpha$ -3Gal $\beta$ 1-4Glc $\beta$ -Cer36                             | -   | 5   | 36  | 30 |
| 63 | GSC-24                     | (C8) NeuAc $\alpha$ -3Gal $\beta$ 1-4Glc $\beta$ -Cer36                             | 29  | 6   | -   | 34 |
| 64 | GSC-50                     | (C8 diastereoisomer) NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36              | -   | 104 | -   | 26 |
| 65 | GSC-229                    | NeuAc $\alpha$ -8NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                  | -   | 212 | -   | 48 |
| 66 | GSC-96                     | NeuAc $\alpha$ -9NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                  | -   | 103 | -   | 51 |
| 67 | GSC-437                    | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36 | 27  | 106 | 30  | 54 |
| 68 | Neu $\alpha$ -(3')Lac      | Neu $\alpha$ -3Gal $\beta$ -4Glc  | -   | 146 | -   | 51 |
| 69 | Neu $\alpha$ -(3')Lac-AO   | Neu $\alpha$ -3Gal $\beta$ -4Glc-AO   | -   | 614 | -   | 17 |
| 70 | NeuAc $\alpha$ -(6')Lac    | NeuAc $\alpha$ -6Gal $\beta$ -4Glc  | -   | 73  | -   | 35 |
| 71 | NeuAc $\alpha$ -(6')Lac-AO | NeuAc $\alpha$ -6Gal $\beta$ -4Glc-AO   | -   | 24  | -   | 40 |
| 72 | GSC-61                     | NeuAc $\alpha$ -6Gal $\beta$ -4Glc $\beta$ -Cer36                                   | 131 | 26  | 41  | 37 |
| 73 | GSC-12                     | NeuAc $\alpha$ -(S)-6Gal $\beta$ -4Glc $\beta$ -Cer36                               | 68  | 93  | 108 | 55 |
| 74 | GSC-234                    | NeuAc $\alpha$ -(S)-6Gal $\beta$ -(S)-4Glc $\beta$ -Cer36                           | 181 | 120 | 20  | 56 |
| 75 | GSC-73                     | NeuAc $\alpha$ -(S)-6Gal $\beta$ -4Glc $\beta$ -(S)-Cer36                           | -   | 263 | 40  | 22 |
| 76 | Neu $\alpha$ -(6')Lac      | Neu $\alpha$ -6Gal $\beta$ -4Glc  | -   | 406 | -   | 24 |
| 77 | Neu $\alpha$ -(6')Lac-AO   | Neu $\alpha$ -6Gal $\beta$ -4Glc-AO   | -   | 138 | -   | 3  |
| 78 | NeuAc $\beta$ -(3')Lac     | NeuAc $\beta$ -3Gal $\beta$ -4Glc   | -   | 240 | -   | 10 |

|    |                                     |  |     |     |        |       |
|----|-------------------------------------|--|-----|-----|--------|-------|
| 79 | NeuAc $\beta$ -(3')Lac-AO           | NeuAc $\beta$ -3Gal $\beta$ -4Glc-AO                             | -   | 14  | 23     | 20    |
| 80 | NeuAc $\beta$ -(6')Lac              | NeuAc $\beta$ -6Gal $\beta$ -4Glc                                | 104 | 165 | 5      | 16    |
| 81 | NeuAc $\beta$ -(6')Lac-AO           | NeuAc $\beta$ -6Gal $\beta$ -4Glc-AO                             | -   | 103 | -      | 15    |
| 82 | GSC-161                             | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -C30<br> <br>Fuca-3   | -   | 117 | -      | 19    |
| 83 | GSC-162                             | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer36<br> <br>Fuca-3 | 12  | 1   | -      | 17    |
| 84 | LacNAc(1-3)                         | Gal $\beta$ -3GlcNAc   | 114 | 114 | 62     | 24    |
| 85 | LacNAc(1-3)-AO                      | Gal $\beta$ -3GlcNAc-AO  | -   | 104 | 11     | 23    |
| 86 | LacNAc                              | Gal $\beta$ -4GlcNAc   | -   | 154 | 31     | 3     |
| 87 | LacNAc-AO                           | Gal $\beta$ -4GlcNAc-AO  | -   | 13  | -      | 55    |
| 88 | Gal $\alpha$ -4Gal $\beta$ -4GlcNAc | Gal $\alpha$ -4Gal $\beta$ -4GlcNAc                              | 133 | 33  | 60     | 2     |
| 89 | SU(3')-LN                           | SU-3Gal $\beta$ -4GlcNAc   | -   | 62  | -      | 32    |
| 90 | Lea-Tri                             | Gal $\beta$ -3GlcNAc<br> <br>Fuca-4                              | -   | 103 | 117    | 91    |
| 91 | Lea-Tri-AO                          | Gal $\beta$ -3GlcNAc-AO<br> <br>Fuca-4                           | -   | 122 | 15,797 | 1,013 |
| 92 | Lex-Tri                             | Gal $\beta$ -4GlcNAc<br> <br>Fuca-3                              | -   | 37  | -      | 17    |
| 93 | Lex-Tri-AO                          | Gal $\beta$ -4GlcNAc-AO<br> <br>Fuca-3                           | -   | 56  | -      | 48    |
| 94 | Lex-Tri-(Me)AO                      | Gal $\beta$ -4GlcNAc-(Me)AO<br> <br>Fuca-3                       | -   | 258 | 5      | 9     |
| 95 | SU(3')-Lea-Tri                      | SU-3Gal $\beta$ -3GlcNAc<br> <br>Fuca-4                          | -   | 77  | 27,114 | 1,598 |
| 96 | SU(3')-Lex-Tri                      | SU-3Gal $\beta$ -4GlcNAc<br> <br>Fuca-3                          | -   | 211 | 18,301 | 484   |
| 97 | NeuAc $\alpha$ -(3')LN1-3           | NeuAc $\alpha$ -3Gal $\beta$ -3GlcNAc                            | -   | 50  | -      | 38    |
| 98 | NeuAc $\alpha$ -(3')LN1-3-AO        | NeuAc $\alpha$ -3Gal $\beta$ -3GlcNAc-AO                         | -   | 69  | -      | 31    |

|     |                           |   |                     |       |    |     |
|-----|---------------------------|---|---------------------|-------|----|-----|
| 99  | NeuAc $\alpha$ -(3')LN    | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc   | -                   | 48    | -  | 30  |
| 100 | NeuAc $\alpha$ -(3')LN-AO | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc-AO  | -                   | 4     | -  | 38  |
| 101 | PI-1                      | NeuAc $\alpha$ -3(6-NAc)Gal $\beta$ -4GlcNAc                                      | -                   | 85    | -  | 8   |
| 102 | PI-1-AO                   | NeuAc $\alpha$ -3(6-NAc)Gal $\beta$ -4GlcNAc-AO                                   | -                   | 16    | -  | 21  |
| 103 | PI-2                      | NeuAc $\alpha$ -3(6-NBz)Gal $\beta$ -4GlcNAc                                      | -                   | 78    | -  | 64  |
| 104 | PI-2-AO                   | NeuAc $\alpha$ -3(6-NBz)Gal $\beta$ -4GlcNAc-AO                                   | -                   | 219   | 5  | 5   |
| 105 | NeuAc $\alpha$ -(6')LN    | NeuAc $\alpha$ -6Gal $\beta$ -4GlcNAc   | -                   | 257   | -  | 8   |
| 106 | NeuAc $\alpha$ -(6')LN-AO | NeuAc $\alpha$ -6Gal $\beta$ -4GlcNAc-AO  | -                   | 142   | -  | 48  |
| 107 | Neu5,9Ac-(6')LN           | Neu5,9Ac $\alpha$ -6Gal $\beta$ -4GlcNAc  | -                   | 15    | -  | 12  |
| 108 | SA(3')-Lea-Tri            | NeuAc $\alpha$ -3Gal $\beta$ -3GlcNAc<br> <br>Fuca-4                              | -                   | 31    | -  | 5   |
| 109 | SA(3')-Lea-Tri-AO         | NeuAc $\alpha$ -3Gal $\beta$ -3GlcNAc-AO<br> <br>Fuca-4                           | -                   | 36    | 36 | 25  |
| 110 | SA(3')-Lex-Tri            | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc<br> <br>Fuca-3                              | -                   | 208   | -  | 12  |
| 111 | SA(3')-Lex-Tri-AO         | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc-AO<br> <br>Fuca-3                           | -                   | 90    | 9  | 6   |
| 112 | GSC-440                   | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -C30<br> <br>Fuca-3                 | 70                  | 161   | -  | 101 |
| 113 | GSC-512                   | Neu4,5Ac $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -C30<br> <br>Fuca-3              | -                   | 155   | 29 | 44  |
| 114 | GSC-513                   | Neu5,9Ac $\alpha$ -3Gal $\beta$ -3GlcNAc $\beta$ -C30<br> <br>Fuca-4              | 37                  | 24    | -  | 12  |
| 115 | GSC-511                   | Neu5,9Ac $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -C30<br> <br>Fuca-3              | -                   | 20    | 7  | 20  |
| 116 | GSC-225                   | (3-carboxymethyl)Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br> <br>Fuca-3 | -                   | 329   | -  | 91  |
| 117 | GSC-236                   | SU-3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -C30<br> <br>Fuca-3                | -                   | 27    | -  | 66  |
| 118 | GSC-479                   | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -C30<br> <br>Fuca-3   | 1,836<br>(artefact) | 1,896 | -  | 8   |

|     |                          |  |     |     |     |    |
|-----|--------------------------|--|-----|-----|-----|----|
| 119 | GSC-105                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Fuca $\alpha$ -3             | 141 | 101 | -   | 20 |
| 120 | GSC-121                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>(3-deoxy) Fuca $\alpha$ -3   | 59  | 13  | 35  | 7  |
| 121 | GSC-123                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>(4-deoxy) Fuca $\alpha$ -3   | -   | 81  | 6   | 21 |
| 122 | GSC-133                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>(2-OMe) Fuca $\alpha$ -3     | 11  | 68  | 3   | 7  |
| 123 | GSC-131                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Quva $\alpha$ -3             | -   | 77  | -   | 47 |
| 124 | GSC-163                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Rha $\alpha$ -3              | -   | 24  | -   | 5  |
| 125 | GSC-127                  | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>(6-deoxy) L-Tal $\alpha$ -3  | 50  | 65  | 13  | 45 |
| 126 | GSC-341                  | KDN $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -C30<br>Fuca $\alpha$ -3                 | 26  | 32  | -   | 26 |
| 127 | GSC-177                  | NeuGca-3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Fuca $\alpha$ -3                      | 198 | 109 | -   | 31 |
| 128 | GSC-175                  | NeuAc $\alpha$ -3(4-deoxy) Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Fuca $\alpha$ -3   | 173 | 266 | 11  | 10 |
| 129 | GSC-176                  | NeuAc $\alpha$ -3(6-deoxy) Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Fuca $\alpha$ -3   | -   | 74  | 23  | 2  |
| 130 | GSC-257                  | NeuAc $\alpha$ -3(4,6-deoxy) Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -Cer36<br>Fuca $\alpha$ -3 | -   | 29  | 33  | 5  |
| 131 | DLNN                     | GlcNAc $\beta$ -3Gal $\beta$ -4Glc   | -   | 156 | 953 | 36 |
| 132 | LNT                      | Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc   | 145 | 110 | -   | 10 |
| 133 | Paragloboside            | Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer                                      | -   | 81  | 5   | 37 |
| 134 | LNnT                     | Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc   | 81  | 238 | 85  | 43 |
| 135 | B-like pentaosylceramide | Gal $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer                       | -   | 39  | -   | 38 |
| 136 | Klaus glycolipid         | Gal $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer                        | -   | 141 | 63  | 29 |
| 137 | GSC-207                  | GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -C30                       | -   | 27  | -   | 9  |
| 138 | GSC-191                  | GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer36                     | -   | 63  | -   | 60 |

|     |                          |  |     |     |       |     |
|-----|--------------------------|--|-----|-----|-------|-----|
| 139 | GSC-189                  | GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer42         | 192 | 43  | 15    | 23  |
| 140 | SU(3')-Tri               | SU-3Gal $\beta$ -4GlcNAc $\beta$ -3Gal   | 11  | 207 | 41    | 16  |
| 141 | GSC-208                  | SU-3GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -C30       | -   | 106 | -     | 18  |
| 142 | GSC-192                  | SU-3GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer36     | 29  | 30  | 2,692 | 190 |
| 143 | GSC-190                  | SU-3GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer42     | -   | 148 | 399   | 80  |
| 144 | Led-II pentaosylceramide | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -CerA                   | -   | 9   | 33    | 73  |
| 145 | Led-I pentaosylceramide  | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -CerB                   | 96  | 20  | -     | 38  |
| 146 | LNFP-I                   | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc                                 | -   | 260 | 845   | 82  |
| 147 | B-hexaosylceramide       | Gal $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer<br>Fuca-2 | 54  | 21  | -     | 35  |
| 148 | A-Hexa                   | GalNAc $\alpha$ -3Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-2           | -   | 5   | -     | 10  |
| 149 | A-Hepta                  | GalNAc $\alpha$ -3Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-2 Fuca-4    | -   | 83  | -     | 23  |
| 150 | LNFP-II                  | Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-4                             | -   | 96  | 7     | 7   |
| 151 | LNDFH-II                 | Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-4 Fuca-3                      | -   | 286 | 14    | 6   |
| 152 | Leb-hexaosylceramide     | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer<br>Fuca-4          | -   | 112 | -     | 3   |
| 153 | LNDFH-I                  | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-4                       | -   | 11  | -     | 51  |
| 154 | LNDFH-I                  | Fuca-2Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-4 Fuca-2                | -   | 75  | -     | 39  |
| 155 | LNFP-III                 | Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-3                             | -   | 322 | 5     | 94  |
| 156 | LNFP-III-AO              | Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc-AO<br>Fuca-3                          | -   | 104 | 3     | 54  |
| 157 | LNnDFH-I                 | Fuca-2Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-3                       | -   | 104 | 266   | 58  |
| 158 | LNnDFH-II                | Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc<br>Fuca-3 Fuca-3                      | -   | 163 | 34    | 24  |



|     |                     |   |     |     |        |       |
|-----|---------------------|---|-----|-----|--------|-------|
| 159 | LNnDFH-V            | Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3 Fuca-2       | -   | 38  | -      | 12    |
| 160 | LNnTFH-I            | Fuca-2Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3 Fuca-2 | 125 | 9   | -      | 12    |
| 161 | SU(3')-LNFP-II      | SU-3Galβ-3GlcNAcβ-4Galβ-4Glc<br>Fuca-4          | -   | 77  | -      | 9     |
| 162 | SU(6')-LNFP-II      | SU-6Galβ-3GlcNAcβ-3Galβ-4Glc<br>Fuca-4          | -   | 46  | 26     | 63    |
| 163 | SU(3')-LNFP-III     | SU-3Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3          | -   | 123 | -      | 5     |
| 164 | SU(6')-LNFP-III     | SU-6Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3          | -   | 155 | 21,615 | 83    |
| 165 | SU(3',6)-LNFP-III   | SU-6<br>SU-3Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3  | -   | 98  | 24,680 | 1,308 |
| 166 | LSTa                | NeuAcα-3Galβ-3GlcNAcβ-3Galβ-4Glc                | -   | 91  | 62     | 6     |
| 167 | GSC-272             | NeuAcα-3Galβ-3GlcNAcβ-3Galβ-4Glcβ-C30           | -   | 18  | -      | 46    |
| 168 | GSC-147             | KDNα-3Galβ-3GlcNAcβ-3Galβ-4Glcβ-Cer36           | -   | 36  | -      | 31    |
| 169 | GSC-396             | NeuGcα-3Galβ-3GlcNAcβ-3Galβ-4Glcβ-C30           | -   | 236 | -      | 23    |
| 170 | LSTb                | Galβ-3GlcNAcβ-3Galβ-4Glc<br>NeuAcα-6            | -   | 116 | -      | 70    |
| 171 | GSC-397             | NeuGcα-6Galβ-3GlcNAcβ-3Galβ-4Glcβ-C30           | -   | 148 | -      | 11    |
| 172 | DSLNT               | NeuAcα-3Galβ-3GlcNAcβ-3Galβ-4Glc<br>NeuAcα-6    | -   | 6   | -      | 30    |
| 173 | Sialylparagloboside | NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer           | 8   | 278 | -      | 29    |
| 174 | GSC-273             | NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-C30           | -   | 122 | -      | 21    |
| 175 | GSC-31              | NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36         | 258 | 74  | -      | 22    |
| 176 | LSTc                | NeuAcα-6Galβ4-GlcNAcβ3-Galβ4-Glc                | -   | 52  | -      | 7     |
| 177 | GSC-516B            | Neuα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>SU-6   | -   | 68  | 15     | 6     |
| 178 | SA(3/6)LNFP-I       | NeuAcα-3/6Galβ-3GlcNAcβ-3Galβ-4Glc<br>Fuca-2    | -   | 121 | -      | 49    |

|     |                 |  |     |     |        |     |
|-----|-----------------|--|-----|-----|--------|-----|
| 179 | SA(3')-LNFP-II  | NeuAcα-3Galβ-3GlcNAcβ-3Galβ-4Glc<br>Fuca-4                     | -   | 111 | -      | 43  |
| 180 | SA(6')-LNFP-VI  | NeuAcα-6Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3                     | -   | 295 | -      | 27  |
| 181 | GSC-533         | NeuAcα-3Galβ-4GlcNAβ-3Galβ-4Glcβ-Cer36<br>Fuca-3               | -   | 66  | -      | 10  |
| 182 | GSC-64          | NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3              | -   | 121 | 10     | 18  |
| 183 | SA(3')-LNFP-III | NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glc<br>Fuca-3                     | -   | 72  | 3      | 49  |
| 184 | GSC-472         | Neuα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3                | 136 | 147 | -      | 25  |
| 185 | GSC-97          | NeuAcα-6Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3              | -   | 154 | -      | 19  |
| 186 | GSC-314         | KDNα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-C30<br>Fuca-3                  | -   | 22  | -      | 83  |
| 187 | GSC-149         | KDNα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3                | -   | 72  | -      | 3   |
| 188 | GSC-311         | KDNα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-C30<br>Rhaα-3                  | -   | 11  | -      | 14  |
| 189 | GSC-268         | SU-6<br>NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3      | -   | 41  | 16,424 | 494 |
| 190 | GSC-268 deNac   | SU-6<br>Neuα-3Galβ-4GlcNAβ-3Galβ-4Glcβ-Cer36<br>Fuca-3         | -   | 7   | 7,499  | 35  |
| 191 | GSC-269         | SU-6<br>NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3      | -   | 80  | -      | 11  |
| 192 | GSC-406         | SU-6<br>Neuα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3        | -   | 22  | -      | 62  |
| 193 | GSC-270         | SU-6 SU-6<br>NeuAcα-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer36<br>Fuca-3 | -   | 63  | 16,838 | 910 |
| 194 | pLNH            | Galβ-3GlcNAcβ-3Galβ-4GlcNAcβ-3Galβ-4Glc                        | -   | 69  | 17     | 17  |
| 195 | pLNnH           | Galβ-4GlcNAcβ-3Galβ-4GlcNAcβ-3Galβ-4Glc                        | 22  | 34  | -      | 23  |
| 196 | GSC-216         | GlcAβ-3Galβ-4GlcNAcβ-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer42          | -   | 44  | -      | 4   |
| 197 | GSC-217         | SU-3GlcAβ-3Galβ-4GlcNAcβ-3Galβ-4GlcNAcβ-3Galβ-4Glcβ-Cer42      | 10  | 167 | 676    | 218 |

|     |                         |   |     |     |     |    |
|-----|-------------------------|---|-----|-----|-----|----|
| 198 | GSC-218                 | GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer36   | -   | 42  | -   | 52 |
| 199 | GSC-219                 | SU-3GlcA $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer36   | -   | 11  | 151 | 32 |
| 200 | LNH                     | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4Glc<br> <br>Gal $\beta$ -3GlcNAc $\beta$ -3   | -   | 230 | 19  | 6  |
| 201 | iLNO                    | Gal $\beta$ -3GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4Glc<br> <br>Gal $\beta$ -3GlcNAc $\beta$ -3  | -   | 7   | 24  | 16 |
| 202 | LND                     | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -3GlcNAc $\beta$ -3<br> <br>Gal $\beta$ -4Glc<br> <br>Gal $\beta$ -3GlcNAc $\beta$ -3   | -   | 780 | -   | 12 |
| 203 | LNnH                    | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4Glc<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3   | 116 | 165 | 34  | 28 |
| 204 | Nonaosylceramide        | GlcNAc $\beta$ -6<br> <br>GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3<br> <br>GlcNAc $\beta$ -3<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer   | -   | 130 | -   | 52 |
| 205 | I-octaosylceramide      | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3   | -   | 24  | -   | 7  |
| 206 | I-dodecaosylceramide    | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3   | -   | 377 | -   | 88 |
| 207 | I-hexadecaosylceramide  | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer                                | -   | 81  | -   | 15 |
| 208 | I-eicosaosylceramide    | Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer | -   | 108 | 25  | 15 |
| 209 | B-like decaosylceramide | Gal $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -6<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -4Glc $\beta$ -Cer<br> <br>Gal $\beta$ -4GlcNAc $\beta$ -3  | -   | 85  | -   | 10 |

|     |                              |  |    |     |    |    |
|-----|------------------------------|--|----|-----|----|----|
| 210 | B-like pentadecaosylceramide | $  \begin{array}{c}  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3}  \end{array}  $   | -  | 448 | -  | 45 |
| 211 | B-like eicosaosylceramide    | $  \begin{array}{c}  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3}  \end{array}  $   | -  | 111 | 15 | 15 |
| 212 | B-like pentaicososylceramide | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \qquad \qquad \qquad   \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \quad \text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3}  \end{array}  $ | -  | 36  | -  | 4  |
| 213 | pLNFH-IV                     | $  \begin{array}{c}  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc} \\    \\  \text{Fuca}\alpha\text{-3}  \end{array}  $  | -  | 79  | -  | 8  |
| 214 | DFpLNH-II                    | $  \begin{array}{c}  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-4} \qquad \text{Fuca}\alpha\text{-3}  \end{array}  $   | -  | 234 | -  | 6  |
| 215 | TFpLNH-I                     | $  \begin{array}{c}  \text{Fuca}\alpha\text{-2Gal}\beta\text{-3GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-4} \qquad \text{Fuca}\alpha\text{-3}  \end{array}  $  | -  | 179 | 11 | 14 |
| 216 | MFLNH-III                    | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \quad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $   | 95 | 51  | -  | 59 |
| 217 | DFLNH(b)                     | $  \begin{array}{c}  \text{Fuca}\alpha\text{-3} \\    \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4Glc} \\    \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-4}  \end{array}  $   | -  | 100 | -  | 28 |
| 218 | DFLNH(c)                     | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4Glc} \\    \\  \text{Fuca}\alpha\text{-2Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-4}  \end{array}  $   | -  | 83  | -  | 5  |
| 219 | DFLNH(a)                     | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \quad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-2Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $  | -  | 129 | -  | 23 |
| 220 | TFLNH                        | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \quad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-2Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-4}  \end{array}  $   | -  | 8   | -  | 25 |
| 221 | MFILNO-IV                    | $  \begin{array}{c}  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-3} \qquad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $  | 68 | 60  | 19 | 8  |

|     |                            |  |     |     |    |    |
|-----|----------------------------|--|-----|-----|----|----|
| 222 | TFiLNO                     | $  \begin{array}{c}  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \qquad \qquad \qquad   \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-4} \qquad \qquad \text{Fuca}\alpha\text{-3} \qquad \qquad \text{Gal}\beta\text{-4Glc} \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad   \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad   \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{Fuca}\alpha\text{-4}  \end{array}  $ | 177 | 77  | 22 | 6  |
| 223 | MFLND                      | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \qquad \qquad \qquad \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4Glc} \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad   \\  \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $  | 38  | 103 | 7  | 44 |
| 224 | MFLNnH(a)                  | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad \qquad \qquad \qquad   \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4Glc}  \end{array}  $  | 69  | 23  | -  | 12 |
| 225 | DFLNnH                     | $  \begin{array}{c}  \text{Fuca}\alpha\text{-3} \\    \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4Glc} \\    \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-3}  \end{array}  $   | 4   | 102 | 3  | 1  |
| 226 | B-III dodecaosylceramide   | $  \begin{array}{c}  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-2} \qquad \qquad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-2}  \end{array}  $   | 216 | 7   | 70 | 31 |
| 227 | B-IV tetradecaosylceramide | $  \begin{array}{c}  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-2} \qquad \qquad \text{Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer} \\    \\  \text{Gal}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3} \\    \\  \text{Fuca}\alpha\text{-2}  \end{array}  $  | 90  | 55  | 74 | 4  |
| 228 | MSLNH                      | $  \begin{array}{c}  \text{NeuAc}\alpha\text{-6Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4Glc} \\    \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\    \\  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6}  \end{array}  $  | -   | 207 | -  | 8  |
| 229 | MSLNnH-I                   | $  \begin{array}{c}  \text{Gal}\beta\text{-4Glc} \\    \\  \text{Gal}\beta\text{-3GlcNAc}\beta\text{-3} \\    \\  \text{NeuAc}\alpha\text{-6Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $   | -   | 40  | -  | 29 |
| 230 | DSLNnH                     | $  \begin{array}{c}  \text{NeuAc}\alpha\text{-6Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Gal}\beta\text{-4Glc} \\    \\  \text{NeuAc}\alpha\text{-6Gal}\beta\text{-4GlcNAc}\beta\text{-3}  \end{array}  $   | 52  | 22  | -  | 2  |
| 231 | MSMFLNH                    | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad \qquad \qquad \qquad   \\  \text{NeuAc}\alpha\text{-3Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $   | -   | 33  | -  | 27 |
| 232 | MFMSLNnH                   | $  \begin{array}{c}  \text{Gal}\beta\text{-4GlcNAc}\beta\text{-6} \\    \\  \text{Fuca}\alpha\text{-3} \qquad \qquad \qquad \text{Gal}\beta\text{-4Glc} \\    \qquad \qquad \qquad \qquad \qquad \qquad   \\  \text{NeuAc}\alpha\text{-6Gal}\beta\text{-3GlcNAc}\beta\text{-3}  \end{array}  $   | -   | 78  | 34 | 23 |
| 233 | GSC-221                    | $  \begin{array}{c}  \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer36} \\    \\  \text{Fuca}\alpha\text{-3}  \end{array}  $  | -   | 59  | -  | 11 |
| 234 | GSC-220                    | $  \begin{array}{c}  \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-3Gal}\beta\text{-4Glc}\beta\text{-Cer36} \\    \qquad \qquad \qquad   \\  \text{Fuca}\alpha\text{-3} \qquad \qquad \text{Fuca}\alpha\text{-3}  \end{array}  $  | 71  | 104 | 18 | 4  |

|     |                               |   |     |     |        |       |
|-----|-------------------------------|---|-----|-----|--------|-------|
| 235 | C4U                           | NeuAc $\alpha$ -3Gal $\beta$ -4GlcNAc $\beta$ -3Gal $\beta$ -3GlcNAc<br>                       <br>SU-6      SU-6      SU-6                                   | -   | 114 | 2      | 1     |
| 236 | Man2( $\alpha$ 2)             | Man $\alpha$ -2Man  | 19  | 85  | 30     | 7     |
| 237 | Man2( $\alpha$ 3)             | Man $\alpha$ -3Man  | 357 | 20  | 35     | 34    |
| 238 | Man2( $\alpha$ 6)             | Man $\alpha$ -6Man  | 70  | 28  | 346    | 77    |
| 239 | Man3( $\alpha$ 3, $\alpha$ 6) | Man $\alpha$ -6Man<br> <br>Man $\alpha$ -3  | 304 | 28  | 27     | 2     |
| 240 | Man5( $\alpha$ 3, $\alpha$ 6) | Man $\alpha$ -6Man $\alpha$ -6Man<br>            <br>Man $\alpha$ -3  Man $\alpha$ -3   | 8   | 53  | 6,374  | 1,078 |
| 241 | Man1GN1                       | Man $\beta$ -4GlcNAc  | -   | 10  | 69     | 11    |
| 242 | Man2GN1                       | Man $\alpha$ -3Man $\beta$ -4GlcNAc   | -   | 22  | 329    | 84    |
| 243 | Man2aGN2                      | Man $\alpha$ -6Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc  | 79  | 28  | 7,091  | 382   |
| 244 | Man3GN2                       | Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc<br> <br>Man $\alpha$ -3   | 3   | 62  | 415    | 16    |
| 245 | Man4aGN2                      | Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc<br> <br>Man $\alpha$ -3  | -   | 12  | 112    | 31    |
| 246 | Man4bGN2                      | Man $\alpha$ -6<br> <br>Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc  | -   | 4   | 4,307  | 23    |
| 247 | Man5GN2                       | Man $\alpha$ -6<br> <br>Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc<br> <br>Man $\alpha$ -3                                  | 40  | 48  | 288    | 33    |
| 248 | Man6GN2                       | Man $\alpha$ -6<br> <br>Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc<br> <br>Man $\alpha$ -2Man $\alpha$ -3                   | 194 | 150 | 473    | 29    |
| 249 | Man7(D1)GN2                   | Man $\alpha$ -6<br> <br>Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc<br> <br>Man $\alpha$ -2Man $\alpha$ -2Man $\alpha$ -3    | -   | 41  | 21,068 | 2,112 |
| 250 | Man7(D1)GN2-AO                | Man $\alpha$ -6<br> <br>Man $\alpha$ -3Man $\alpha$ -6<br> <br>Man $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO<br> <br>Man $\alpha$ -2Man $\alpha$ -2Man $\alpha$ -3 | -   | 3   | 17,920 | 116   |

|     |                    |   |    |     |        |       |
|-----|--------------------|---|----|-----|--------|-------|
| 251 | Man7(D3)GN2        | <pre> Manα-2Manα-6   Manα-3Manα-6   Manβ-4GlcNAcβ-4GlcNAc   Manα-2Manα-3 </pre>                             | -  | 7   | 5,523  | 357   |
| 252 | Man8(D1D3)GN2      | <pre> Manα-2Manα-6   Manα-3Manα-6   Manβ-4GlcNAcβ-4GlcNAc   Manα-2Manα-2Manα-3 </pre>                       | -  | 229 | 19,073 | 2,315 |
| 253 | Man9GN2            | <pre> Manα-2Manα-6   Manα-2Manα-3Manα-6   Manβ-4GlcNAcβ-4GlcNAc   Manα-2Manα-2Manα-3 </pre>                 | 21 | 12  | 17,004 | 1,807 |
| 254 | Man9GN2-AO         | <pre> Manα-2Manα-6   Manα-2Manα-3Manα-6   Manβ-4GlcNAcβ-4GlcNAc-AO   Manα-2Manα-2Manα-3 </pre>              | -  | 65  | 12,074 | 142   |
| 255 | Glc1Man9GN2        | <pre> Manα-2Manα-6   Manα-6   Manα-2Manα-3 Manβ-4GlcNAcβ-4GlcNAc   Glcα-3Manα-2Manα-2Manα-3 </pre>          | -  | 120 | 5,074  | 147   |
| 256 | Glc1Man9GN2-AO     | <pre> Manα-2Manα-6   Manα-6   Manα-2Manα-3 Manβ-4GlcNAcβ-4GlcNAc-AO   Glcα-3Manα-2Manα-2Manα-3 </pre>       | -  | 173 | 5,846  | 418   |
| 257 | Glc2Man9GN2-AO     | <pre> Manα-2Manα-6   Manα-6   Manα-2Manα-3 Manβ-4GlcNAcβ-4GlcNAc-AO   Glcα-3Glcα-3Manα-2Manα-2Manα-3 </pre> | -  | 43  | 361    | 42    |
| 258 | Glc2Man7(D1)GN1-AO | <pre> Manα-6   Manα-3Manα-6   Manβ-4GlcNAc-AO   Glcα-3Glcα-3Manα-2Manα-2Manα-3 </pre>                       | -  | 7   | 2,452  | 161   |
| 259 | Glc3Man7(D1)GN1-AO | <pre> Manα-6   Manα-3Manα-6   Manβ-4GlcNAc-AO   Glcα-2Glcα-3Glcα-3Manα-2Manα-2Manα-3 </pre>                 | -  | 19  | 2      | 7     |
| 260 | Man3XylGN2         | <pre> Manα-6   Xylβ-2Manβ-4GlcNAcβ-4GlcNAc   Manα-3 </pre>  | 6  | 59  | 41     | 17    |
| 261 | N1                 | <pre> Galβ-4GlcNAcβ-2Manα-6 Fucα-6   Manβ-4GlcNAcβ-4GlcNAc   Manα-3 </pre>                                  | 91 | 90  | 19     | 10    |

|     |                |   |    |     |        |       |
|-----|----------------|---|----|-----|--------|-------|
| 262 | N2             | <pre>       Manα-6               Manβ-4GlcNAcβ-4GlcNAc         Galβ-4GlcNAcβ-2Manα-3 </pre>   | 14 | 22  | 25     | 14    |
| 263 | N4             | <pre>       Manβ-4GlcNAcβ-4GlcNAc  ?               Manα-3 </pre>  | -  | 20  | 37     | 10    |
| 264 | GlcNac2Man3-AO | <pre>       GlcNAcβ-2Manα-6               Man-AO               GlcNAcβ-2Manα-3 </pre>   | -  | 96  | 22,344 | 279   |
| 265 | N3             | <pre>       (Galβ-4) GlcNAcβ-2Manα-6      Fuca-6   Manβ-4GlcNAcβ-4GlcNAc   ?                               GlcNAcβ-2Manα-3 </pre> | -  | 51  | 34     | 15    |
| 266 | NGA2           | <pre>       GlcNAcβ-2Manα-6               Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-2Manα-3 </pre>  | -  | 13  | 2,287  | 75    |
| 267 | NGA2B          | <pre>       GlcNAcβ-4Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-2Manα-3 </pre>   | 56 | 67  | 3,736  | 204   |
| 268 | NGA3B          | <pre>       GlcNAcβ-4Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-4Manα-3               GlcNAcβ-2               GlcNAcβ-6               GlcNAcβ-2Manα-6               Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-2Manα-3               GlcNAcβ-4 </pre>   | 11 | 31  | 4,831  | 160   |
| 269 | NGA4           | <pre>       GlcNAcβ-2               GlcNAcβ-6               GlcNAcβ-2Manα-6               Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-2Manα-3               GlcNAcβ-4 </pre>  | -  | 101 | 26,850 | 1,621 |
| 270 | NGA5B          | <pre>       GlcNAcβ-2               GlcNAcβ-4Manα-6               GlcNAcβ-6               GlcNAcβ-4Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-4Manα-3               GlcNAcβ-2 </pre>   | 12 | 13  | 246    | 12    |
| 271 | GNMan5BGN2     | <pre>       Manα-6               Manα-3Manα-6               GlcNAcβ-4Manβ-4GlcNAcβ-4GlcNAc               GlcNAcβ-2Manα-3 </pre>   | -  | 36  | 1,672  | 169   |
| 272 | NA2            | <pre>       Galβ-4GlcNAcβ-2Manα-6               Manβ-4GlcNAcβ-4GlcNAc               Galβ-4GlcNAcβ-2Manα-3 </pre>  | 66 | 27  | -      | -     |
| 273 | NA3            | <pre>       Galβ-4GlcNAcβ-2Manα-6               Manβ-4GlcNAcβ-4GlcNAc               Galβ-4GlcNAcβ-4Manα-3               Galβ-4GlcNAcβ-2 </pre>  | -  | 49  | -      | 9     |



|     |             |   |     |     |       |     |
|-----|-------------|---|-----|-----|-------|-----|
| 274 | NA4         | <pre> Galβ-4GlcNAcβ-6   Galβ-4GlcNAcβ-2Manα-6   Manβ-4GlcNAcβ-4GlcNAc   Galβ-4GlcNAcβ-4Manα-3   Galβ-4GlcNAcβ-2 </pre>      | 349 | 36  | -     | 3   |
| 275 | Fuc-GlcNAc  | Fucα-6GlcNAc  | -   | 25  | 48    | 9   |
| 276 | Man3FGN2    | <pre> Manα-6      Fucα-6               Manβ-4GlcNAcβ-4GlcNAc   Manα-3 </pre>  | -   | 19  | 998   | 40  |
| 277 | Man3FXylGN2 | <pre> Manα-6   Xylβ-2Manα-4GlcNAcβ-4GlcNAc   Manα-3      Fucα-3 </pre>  | -   | 40  | 112   | 20  |
| 278 | NGA2F       | <pre> GlcNAcβ-2Manα-6      Fucα-6                       Manβ-4GlcNAcβ-4GlcNAc   GlcNAcβ-2Manα-3 </pre>                      | -   | 92  | 8,514 | 879 |
| 279 | NA2F        | <pre> Galβ-4GlcNAcβ-2Manα-6      Fucα-6                       Manβ-4GlcNAcβ-4GlcNAc   Galβ-4GlcNAcβ-2Manα-3 </pre>          | -   | 102 | -     | 16  |
| 280 | NA2F-AO     | <pre> Galβ-4GlcNAcβ-2Manα-6      Fucα-6                       Manβ-4GlcNAcβ-4GlcNAc-AO   Galβ-4GlcNAcβ-2Manα-3 </pre>       | -   | 64  | -     | 51  |
| 281 | NA2FB       | <pre> Galβ-4GlcNAcβ-2Manα-6      Fucα-6                       GlcNAcβ-4Manβ-4GlcNAcβ-4GlcNAc   Galβ-4GlcNAcβ-2Manα-3 </pre> | -   | 68  | -     | 11  |
| 282 | NA3-Lex     | <pre> Galβ-4GlcNAcβ-2Manα-6   Manβ-4GlcNAcβ-4GlcNAc   Galβ-4GlcNAcβ-4Manα-3   Galβ-4GlcNAcβ-2 +Fuca-3 </pre>                | -   | 181 | -     | 15  |
| 283 | A2(2-6)     | <pre> NeuAcα-6Galβ-4GlcNAcβ-2Manα-6   Manβ-4GlcNAcβ-4GlcNAc   NeuAcα-6Galβ-4GlcNAcβ-2Manα-3 </pre>                          | -   | 34  | -     | 9   |
| 284 | AGP-Bi-Ac2  | <pre> NeuAcα-Galβ-4GlcNAcβ-2Manα-6   Manβ-4GlcNAcβ-4GlcNAc   NeuAcα-Galβ-4GlcNAcβ-2Manα-3 </pre>                            | 23  | 63  | 5     | 19  |
| 285 | AGP-Bi-Gc2  | <pre> NeuGcα-Galβ-4GlcNAcβ-2Manα-6   Manβ-4GlcNAcβ-4GlcNAc   NeuGcα-Galβ-4GlcNAcβ-2Manα-3 </pre>                            | -   | 3   | -     | 40  |
| 286 | AGP-Bi-AcGc | <pre> ?   Manβ-4GlcNAcβ-4GlcNAc   NeuAcα-Galβ-4GlcNAcβ-2Manα-3 </pre>   | -   | 45  | 24    | 32  |

|     |                  |  |     |     |       |     |
|-----|------------------|--|-----|-----|-------|-----|
| 287 | A3               | $\begin{array}{c} \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-2Man}\alpha\text{-6} \\   \\ \text{Man}\beta\text{-4GlcNAc}\beta\text{-4GlcNAc} \\   \\ \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-4Man}\alpha\text{-3} \\   \\ \text{NeuAc}\alpha\text{-6Gal}\beta\text{-4GlcNAc}\beta\text{-2} \end{array}$ | -   | 3   | -     | 4   |
| 288 | A2F(2-3)         | $\begin{array}{c} \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-2Man}\alpha\text{-6} \\   \\ \text{Man}\beta\text{-4GlcNAc}\beta\text{-4GlcNAc} \\   \\ \text{NeuAc}\alpha\text{-3Gal}\beta\text{-4GlcNAc}\beta\text{-2Man}\alpha\text{-3} \\   \\ \text{Fuc}\alpha\text{-6} \end{array}$  | -   | 135 | -     | 9   |
| 289 | GM4              | NeuAc $\alpha$ -3Gal $\beta$ -Cer  | -   | 44  | 10    | 28  |
| 290 | SM3              | SU-3Gal $\beta$ -4Glc $\beta$ -Cer   | -   | 52  | 48    | 4   |
| 291 | Haematoside      | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer  | -   | 137 | 17    | 21  |
| 292 | GM3              | NeuAc $\alpha$ -3Gal $\beta$ -4Glc $\beta$ -Cer  | 8   | 27  | 30    | 26  |
| 293 | GM3(Gc)          | NeuGc $\alpha$ -3Gal $\beta$ -4Glc-Cer   | -   | 171 | -     | 19  |
| 294 | Asialo-GM2       | GalNAc $\beta$ -4Gal $\beta$ -4Glc $\beta$ -Cer  | -   | 48  | 38    | 8   |
| 295 | SM2              | $\begin{array}{c} \text{GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer} \\   \\ \text{SU-3} \end{array}$   | 8   | 66  | -     | 16  |
| 296 | SB2              | $\begin{array}{c} \text{SU-3GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer} \\   \\ \text{SU-3} \end{array}$   | -   | 108 | 5,365 | 124 |
| 297 | GM2              | $\begin{array}{c} \text{GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer} \\   \\ \text{NeuAc}\alpha\text{-3} \end{array}$   | -   | 81  | 16    | 20  |
| 298 | GSC-576          | $\begin{array}{c} \text{GalNAc}\beta\text{-4Gal}\beta\text{-3Glc}\beta\text{-C30} \\   \\ \text{NeuAc}\alpha\text{-3} \end{array}$   | -   | 37  | -     | 1   |
| 299 | GSC-108          | $\begin{array}{c} \text{GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer36} \\   \\ \text{NeuAc}\alpha\text{-3} \end{array}$   | 231 | 48  | -     | 32  |
| 300 | GSC-193          | $\begin{array}{c} \text{GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer36} \\   \\ \text{KDN}\alpha\text{-3} \end{array}$   | 174 | 43  | -     | 6   |
| 301 | Asialo-GM1       | Gal $\beta$ -3GalNAc $\beta$ -4Gal $\beta$ -4Glc $\beta$ -Cer  | -   | 65  | -     | 32  |
| 302 | Asialo-GM1-Tetra | Gal $\beta$ -3GalNAc $\beta$ -4Gal $\beta$ -4Glc   | -   | 104 | 46    | 23  |
| 303 | SM1a             | $\begin{array}{c} \text{Gal}\beta\text{-3GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer} \\   \\ \text{SU-3} \end{array}$  | -   | 178 | -     | 32  |
| 304 | SB1a             | $\begin{array}{c} \text{SU-3Gal}\beta\text{-3GalNAc}\beta\text{-4Gal}\beta\text{-4Glc}\beta\text{-Cer} \\   \\ \text{SU-3} \end{array}$  | -   | 54  | 479   | 69  |
| 305 | GM1b             | NeuAc $\alpha$ -3Gal $\beta$ -3GalNAc $\beta$ -4Gal $\beta$ -4Glc $\beta$ -Cer*  | -   | 6   | -     | 17  |

|     |                    |  |    |     |    |    |
|-----|--------------------|--|----|-----|----|----|
| 306 | GSC-335            | SU-6<br>NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer36  | 37 | 140 | -  | 5  |
| 307 | GM1                | Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-3  | -  | 80  | -  | 17 |
| 308 | GM1-penta          | Galβ-3GalNAcβ-4Galβ-4Glc<br>NeuAcα-3   | -  | 223 | -  | 15 |
| 309 | GM1(Gc)            | Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuGcα-3  | -  | 163 | 25 | 8  |
| 310 | GM1(Gc)-penta      | Galβ-3GalNAcβ-4Galβ-4Glc<br>NeuGcα-3   | -  | 23  | 26 | 2  |
| 311 | GD1a               | NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-3  | -  | 23  | -  | 33 |
| 312 | GD1a-hexa          | NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glc<br>NeuAcα-3   | -  | 129 | -  | 17 |
| 313 | GalNAc-GD1a(Ac,Gc) | GalNAcβ-4Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuGcα-3 NeuAcα-3<br>GalNAcβ-4Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-3 NeuGcα-3 | -  | 31  | -  | 15 |
| 314 | GSC-195            | KDNα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer36<br>KDNα-3  | 93 | 49  | 24 | 20 |
| 315 | GD3                | NeuAcα-8NeuAcα-3Galβ-4Glcβ-Cer   | -  | 7   | -  | 11 |
| 316 | GD3-tetra          | NeuAcα-8NeuAcα-3Galβ-4Glc  | -  | 66  | -  | 25 |
| 317 | GD3-tetra-AO       | NeuAcα-8NeuAcα-3Galβ-4Glc-AO   | -  | 14  | -  | 38 |
| 318 | GD2                | GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-8NeuAcα-3  | -  | 23  | 8  | 8  |
| 319 | GD1b               | Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-8NeuAcα-3  | 96 | 121 | -  | 6  |
| 320 | GT1a               | NeuAcα-8NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-3  | -  | 60  | 10 | 6  |
| 321 | GT1b               | NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-8NeuAcα-3  | -  | 92  | 11 | 11 |
| 322 | GQ1b               | NeuAcα-8NeuAcα-3Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer<br>NeuAcα-8NeuAcα-3  | -  | 63  | -  | 3  |
| 323 | GSC-442            | GalNAcβ-4Galβ-4Glcβ-Cer36<br>NeuAcα-6  | -  | 74  | -  | 31 |
| 324 | GSC-68             | NeuAcα-6Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer36  | -  | 23  | -  | 38 |
| 325 | GSC-155            | Galβ-3GalNAcβ-4Galβ-4Glcβ-Cer36<br>NeuAcα-6  | 92 | -   | 20 | 30 |

|     |                          |  |    |     |        |     |
|-----|--------------------------|--|----|-----|--------|-----|
| 326 | GSC-107                  | NeuAc $\alpha$ -6Gal $\beta$ -3GalNAc $\beta$ -4Gal $\beta$ -4Glc $\beta$ -Cer36<br> <br>NeuAc $\alpha$ -6 | -  | 1   | -      | 7   |
| 327 | GSC-118                  | NeuAc $\alpha$ -3Gal $\beta$ -3GalNAc $\beta$ -4Gal $\beta$ -4Glc $\beta$ -Cer36<br> <br>NeuAc $\alpha$ -6 | 48 | 93  | -      | 11  |
| 328 | GalNAc-Ser               | GalNAc-Ser   | -  | 15  | 57     | 4   |
| 329 | GalNAc-Thr               | GalNAc-Thr   | -  | 124 | 9      | 33  |
| 330 | BSM-Di-A1-AO             | NeuGc $\alpha$ -6GalNAc-AO   | -  | 24  | -      | 3   |
| 331 | BSM-Di-A2-AO             | NeuAc $\alpha$ -6GalNAc-AO   | -  | 57  | -      | 10  |
| 332 | GalNAc $\alpha$ -3GalNAc | GalNAc $\alpha$ -3GalNAc   | -  | 39  | 88     | 8   |
| 333 | Gal $\beta$ -3GalNAc     | Gal $\beta$ -3GalNAc   | -  | 29  | 2      | 41  |
| 334 | Gal $\beta$ -3GalNAc-AO  | Gal $\beta$ -3GalNAc-AO  | -  | 48  | 73     | 15  |
| 335 | Gal $\beta$ -6GalNAc     | Gal $\beta$ -6GalNAc   | -  | 95  | -      | 11  |
| 336 | Gal $\beta$ -6GalNAc-AO  | Gal $\beta$ -6GalNAc-AO  | -  | 66  | -      | 3   |
| 337 | Man-Ser                  | Man $\alpha$ -Ser  | -  | 40  | 808    | 59  |
| 338 | Man-Ser-Succ             | Man-Ser-Succ   | -  | 61  | 6,683  | 183 |
| 339 | Man-Thr                  | Man-Thr  | 49 | 6   | 499    | 148 |
| 340 | Man-Thr-Succ             | Man-Thr-Succ   | -  | 4   | 12,723 | 407 |
| 341 | A8/1                     | GlcNAc $\alpha$ -4Gal $\beta$ -OX  | -  | 93  | 63     | 2   |
| 342 | A8/2                     | SU-6<br> <br>Fuc $\alpha$ -3GlcNAc $\beta$ -OY   | -  | 117 | 8,113  | 608 |
| 343 | A15/1                    | SU-6GlcNAc $\beta$ -OY   | -  | 1   | 23,568 | 644 |
| 344 | A15/3                    | GlcNAc $\alpha$ -4Gal $\beta$ -3Gal $\beta$ -OX<br> <br>Fuc $\alpha$ -2                                    | -  | 6   | 102    | 11  |
| 345 | B13/a                    | GlcA $\beta$ -3Gal $\beta$ -3GlcNAc $\beta$ -OX  | -  | 129 | 6      | 4   |

|     |                          |   |   |     |        |       |
|-----|--------------------------|---|---|-----|--------|-------|
| 346 | Notch-1                  | Fuca-Thr  | - | 88  | 142    | 37    |
| 347 | Notch-2                  | GlcNAc $\beta$ -3Fuca-Thr   | - | 24  | 16,976 | 1,332 |
| 348 | Notch-3                  | Gal $\beta$ -4GlcNAc $\beta$ -3Fuca-Thr   | - | 17  | -      | 10    |
| 349 | GSC-488                  | NeuAc $\alpha$ -3Gal $\beta$ -3GalNAc $\beta$ -C30  | - | 54  | -      | 51    |
| 350 | GSC-491                  | NeuAc $\alpha$ -3Gal $\beta$ -3 (6-deoxy-6-CH <sub>2</sub> COOH) GalNAc $\beta$ -C30  | - | 96  | 50     | 32    |
| 351 | GSC-489                  | $\begin{array}{c} \text{SU-6} \\   \\ \text{NeuAc}\alpha\text{-3Gal}\beta\text{-3GalNAc}\beta\text{-C30} \end{array}$                 | - | 86  | 32     | 11    |
| 352 | DST                      | $\begin{array}{c} \text{NeuAc}\alpha\text{-3Gal}\beta\text{-3GalNAc} \\   \\ \text{NeuAc}\alpha\text{-6} \end{array}$                 | - | 15  | -      | 37    |
| 353 | DST-AO                   | $\begin{array}{c} \text{NeuAc}\alpha\text{-3Gal}\beta\text{-3GalNAc-AO} \\   \\ \text{NeuAc}\alpha\text{-6} \end{array}$              | - | 112 | 10     | 11    |
| 354 | GSC-490                  | $\begin{array}{c} \text{NeuAc}\alpha\text{-3Gal}\beta\text{-3GalNAc}\beta\text{-C30} \\   \\ \text{NeuAc}\alpha\text{-6} \end{array}$ | - | 78  | 62     | 8     |
| 355 | GlcNAc $\beta$ 1-3Fuc-AO | GlcNAc $\beta$ -3Fuc-AO   | - | 65  | 666    | 61    |
| 356 | GlcNAc $\beta$ 1-2Fuc-AO | GlcNAc $\beta$ -2Fuc-AO   | - | 14  | 19,094 | 706   |
| 357 | GlcNAc $\beta$ 1-4Fuc-AO | GlcNAc $\beta$ -4Fuc-AO   | - | 233 | -      | 39    |
| 358 | GlcNAc $\beta$ -2Man-AO  | GlcNAc $\beta$ -2Man-AO   | - | 12  | 17     | 15    |
| 359 | SA2( $\alpha$ 8)         | NeuAc $\alpha$ -8NeuAc  | - | 40  | 56     | 33    |
| 360 | SA3( $\alpha$ 8)         | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc   | - | 20  | -      | 9     |
| 361 | SA4( $\alpha$ 8)         | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc  | - | 90  | -      | 31    |
| 362 | SA5( $\alpha$ 8)*        | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc*  | - | 89  | -      | 20    |
| 363 | SA6( $\alpha$ 8)*        | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc*   | - | 27  | -      | 21    |
| 364 | SA7( $\alpha$ 8)*        | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc*                          | - | 34  | 83     | 82    |
| 365 | SA8( $\alpha$ 8)*        | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc*         | - | 13  | -      | 4     |

|     |                    |   |   |     |       |     |
|-----|--------------------|---|---|-----|-------|-----|
| 366 | SA9( $\alpha$ 8)*  | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ *  | - | 3   | -     | 13  |
| 367 | SA10( $\alpha$ 8)* | NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ -8NeuAc $\alpha$ *   | - | 43  | -     | 7   |
| 368 | HA-S4*             | GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc*  | - | 23  | 16    | 20  |
| 369 | HA-S14*            | GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc $\beta$ -<br>4GlcA $\beta$ -3GlcNAc $\beta$ -4GlcA $\beta$ -3GlcNAc*  | - | 50  | -     | 24  |
| 370 | Hep-Di IS          | $\Delta$ UA-4GlcNS<br>   <br>SU-2 6-SU  | - | 49  | 1,896 | 97  |
| 371 | Hep-Di-IS-AO       | $\Delta$ UA-4GlcNS-AO<br>   <br>SU-2 6-SU   | - | 176 | 1,236 | 83  |
| 372 | CSA-4*             | $\Delta$ UA-3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc*<br>   <br>SU-4 SU-4  | 2 | 76  | 806   | 62  |
| 373 | CSA-14*            | $\Delta$ UA-3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -<br>         <br>SU-4 SU-4 SU-4 SU-4 SU-4<br>-4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc*<br>   <br>SU-4 SU-4  | - | 42  | -     | 20  |
| 374 | CSB-4*             | $\Delta$ UA-3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc*<br>   <br>SU-4 SU-4   | - | 86  | 714   | 32  |
| 375 | CSB-14*            | $\Delta$ UA-3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc $\beta$ -<br>         <br>SU-4 SU-4 SU-4 SU-4 SU-4<br>-4IdoA $\alpha$ -3GalNAc $\beta$ -4IdoA $\alpha$ -3GalNAc*<br>   <br>SU-4 SU-4  | - | 68  | 721   | 4   |
| 376 | CSC-4*             | $\Delta$ UA-3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc*<br>   <br>SU-6 SU-6  | - | 1   | 1,165 | 5   |
| 377 | CSC-14*            | $\Delta$ UA-3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc $\beta$ -<br>         <br>SU-6 SU-6 SU-6 SU-6 SU-6<br>-4GlcA $\beta$ -3GalNAc $\beta$ -4GlcA $\beta$ -3GalNAc*<br>   <br>SU-6 SU-6  | - | 24  | -     | 115 |
| 378 | Hep-4-AO*          | $\Delta$ UA-4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS-AO*<br>       <br>SU-2 6-SU SU-2 SU-6   | - | 13  | 5,166 | 401 |
| 379 | Hep-14-AO*         | $\Delta$ UA-4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS $\alpha$ -<br>               <br>SU-2 6-SU SU-2 SU-6 SU-2 SU-6 SU-2 SU-6 SU-2 SU-6<br>-4IdoA $\alpha$ -4GlcNS $\alpha$ -4IdoA $\alpha$ -4GlcNS-AO*<br>       <br>SU-2 SU-6 SU-2 SU-6 | - | 49  | 4,422 | 64  |
| 380 | HS-S4-AO*          | GlcA $\beta$ -4GlcNAc $\alpha$ -4GlcA $\beta$ -4aMan-AO*<br>(Variously 6S and NS?)  | - | 2   | 1,817 | 388 |
| 381 | HS-S8-AO*          | GlcA $\beta$ -4GlcNAc $\alpha$ -4GlcA $\beta$ -4GlcNAc $\alpha$ -4GlcAGlcA $\beta$ -4GlcNAc $\alpha$ -4GlcA $\beta$ -4aMan-AO*<br>(Variously 6S and NS?)  | - | 89  | 8,060 | 485 |
| 382 | GN2                | GlcNAc $\beta$ -4GlcNAc   | - | 52  | -     | 15  |

|     |                      |   |   |     |        |     |
|-----|----------------------|---|---|-----|--------|-----|
| 383 | GN2-AO               | GlcNAc $\beta$ -4GlcNAc-AO  | - | 17  | 20,120 | 6   |
| 384 | GN3                  | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc  | - | 71  | 3,386  | 303 |
| 385 | GN3-AO               | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO   | - | 39  | 21,753 | 841 |
| 386 | GN4-AO*              | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO*   | - | 13  | 7,573  | 599 |
| 387 | GN5-AO*              | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO*  | - | 139 | 3,307  | 374 |
| 388 | GN6-AO*              | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO*                                   | - | 56  | 60     | 7   |
| 389 | GN7-AO*              | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO*                  | - | 10  | 181    | 32  |
| 390 | GN8-AO*              | GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc $\beta$ -4GlcNAc-AO* | - | 50  | 235    | 15  |
| 391 | Man4( $\beta$ 4)     | Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man   | - | 176 | 1,924  | 481 |
| 392 | Man5( $\beta$ 4)     | Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man   | - | 93  | 13,621 | 1   |
| 393 | Man6( $\beta$ 4)     | Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man $\beta$ -4Man   | - | 57  | 16,512 | 135 |
| 394 | Xyl5( $\beta$ 4)     | Xyl $\beta$ -4Xyl $\beta$ -4Xyl $\beta$ -4Xyl $\beta$ -4Xyl   | - | 55  | -      | 8   |
| 395 | Xyl6( $\beta$ 4)     | Xyl $\beta$ -4Xyl $\beta$ -4Xyl $\beta$ -4Xyl $\beta$ -4Xyl $\beta$ -4Xyl   | - | 63  | 47     | 16  |
| 396 | Ara6( $\alpha$ 5)    | Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara  | - | 43  | 35     | 14  |
| 397 | Ara7( $\alpha$ 5)    | Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara $\alpha$ -5Ara                                     | - | 224 | 16     | 26  |
| 398 | Glc2( $\alpha$ 2)-AO | Glc $\alpha$ -2Glc-AO   | - | 28  | 81     | 34  |
| 399 | Nigerose-AO          | Glc $\alpha$ -3Glc-AO   | - | 73  | -      | 1   |
| 400 | Malto-2-AO           | Glc $\alpha$ -4Glc-AO   | - | 105 | -      | 16  |
| 401 | Malto-3-AO           | Glc $\alpha$ -4Glc $\alpha$ -4Glc-AO  | - | 25  | 21     | 13  |
| 402 | Malto-4-AO           | Glc $\alpha$ -4Glc $\alpha$ -4Glc $\alpha$ -4Glc-AO   | - | 14  | -      | 6   |

|     |              |   |    |     |    |    |
|-----|--------------|---|----|-----|----|----|
| 403 | Malto-5-AO   | Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO  | 8  | 34  | -  | 4  |
| 404 | Malto-6-AO   | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO  | -  | 34  | 17 | 18 |
| 405 | Malto-7-AO   | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO                                      | -  | 14  | 17 | 22 |
| 406 | Malto-8-AO*  | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO*                               | -  | 24  | 11 | 2  |
| 407 | Malto-9-AO*  | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO*                         | 97 | 11  | -  | 10 |
| 408 | Malto-10-AO* | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO*                   | -  | 59  | -  | 31 |
| 409 | Malto-11-AO* | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO*             | -  | 18  | -  | 24 |
| 410 | Malto-12-AO* | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO*       | 44 | 8   | -  | 28 |
| 411 | Malto-13-AO* | Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glcα-4Glc-AO* | -  | 74  | 10 | 11 |
| 412 | Dext-2-AO    | Glcα-6Glc-AO  | -  | 34  | -  | 3  |
| 413 | Dext-3-AO    | Glcα-6Glcα-6Glc-AO  | -  | 102 | 16 | 21 |
| 414 | Dext-4-AO    | Glcα-6Glcα-6Glcα-6Glc-AO  | -  | 11  | -  | 31 |
| 415 | Dext-5-AO*   | Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO  | -  | 134 | 38 | 1  |
| 416 | Dext-6-AO*   | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO  | -  | 177 | -  | 41 |
| 417 | Dext-7-AO    | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO                                      | -  | 41  | -  | 6  |
| 418 | Dext-8-AO*   | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO*                               | -  | 16  | 47 | 47 |
| 419 | Dext-9-AO*   | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO*                         | -  | 7   | -  | 23 |
| 420 | Dext-10-AO*  | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO*                   | -  | 77  | -  | 36 |
| 421 | Dext-11-AO*  | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO*             | -  | 54  | -  | 5  |
| 422 | Dext-12-AO*  | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc-AO*       | -  | 88  | 3  | 3  |



|            |               |   |   |       |     |     |
|------------|---------------|---|---|-------|-----|-----|
| <b>423</b> | Dext-13-AO*   | Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glcα-6Glc- AO*      | - | 1     | 13  | 40  |
| <b>424</b> | Lam-2-AO      | Glcβ-3Glc-AO  | - | 49    | 13  | 2   |
| <b>425</b> | Lam-3-AO      | Glcβ-3Glcβ-3Glc-AO  | - | 80    | 16  | 5   |
| <b>426</b> | Lam-4-AO      | Glcβ-3Glcβ-3Glcβ-3Glc-AO  | - | 12    | 63  | 52  |
| <b>427</b> | Lam-5-AO      | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO  | - | 113   | 15  | 7   |
| <b>428</b> | Lam-6-AO*     | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO  | - | 2,270 | -   | 2   |
| <b>429</b> | Lam-7-AO      | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO                                      | - | 72    | 6   | 3   |
| <b>430</b> | Curd-8-AO*    | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO*                               | - | 50    | -   | 17  |
| <b>431</b> | Curd-9-AO*    | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO*                         | - | 28    | 15  | 53  |
| <b>432</b> | Curd-10-AO*   | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO*                   | - | 122   | -   | 9   |
| <b>433</b> | Curd-11-AO*   | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO*             | - | 84    | 8   | 32  |
| <b>434</b> | Curd-12-AO*   | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO*       | - | 19    | 26  | 37  |
| <b>435</b> | Curd-13-AO*   | Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glcβ-3Glc-AO* | - | 71    | -   | 108 |
| <b>436</b> | Cellobiose-AO | Glcβ-4Glc-AO  | - | 210   | 36  | 49  |
| <b>437</b> | Cello-3-AO    | Glcβ-4Glcβ-4Glc-AO  | - | 89    | -   | 22  |
| <b>438</b> | Cello-4-AO    | Glcβ-4Glcβ-4Glcβ-4Glc-AO  | - | 12    | -   | 24  |
| <b>439</b> | Cello-5-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glc-AO*   | - | 5     | -   | 95  |
| <b>440</b> | Cello-6-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glc-AO  | - | 109   | -   | 29  |
| <b>441</b> | Cello-7-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glc-AO*                                     | - | 37    | -   | 70  |
| <b>442</b> | Cello-8-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glc-AO*                         | - | 28    | 453 | 479 |

|     |                |  |     |     |       |     |
|-----|----------------|--|-----|-----|-------|-----|
| 443 | Cello-9-AO*    | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-AO*       | -   | 17  | -     | 63  |
| 444 | Cello-10-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-AO* | -   | 6   | -     | 13  |
| 445 | Cello-11-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-AO* | -   | 22  | -     | 85  |
| 446 | Cello-12-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-AO* | -   | 13  | 13    | 14  |
| 447 | Cello-13-AO*   | Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-4Glcβ-AO* | -   | 50  | 50    | 21  |
| 448 | Gentiobiose-AO | Glcβ-6Glc-AO   | -   | 14  | 43    | 49  |
| 449 | Pust-3-AO      | Glcβ-6Glcβ-6Glc-AO   | -   | 190 | 117   | 17  |
| 450 | Pust-4-AO      | Glcβ-6Glcβ-6Glcβ-6Glc-AO*                                      | -   | 33  | 2     | 54  |
| 451 | Pust-5-AO      | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*                                | -   | 47  | 26    | 4   |
| 452 | Pust-6-AO      | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*                          | -   | 38  | 36    | 46  |
| 453 | Pust-7-AO*     | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*                    | -   | 59  | 129   | 29  |
| 454 | Pust-8-AO*     | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*              | -   | 41  | -     | 76  |
| 455 | Pust-9-AO*     | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*              | -   | 38  | 14    | 66  |
| 456 | Pust-10-AO*    | Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glcβ-6Glc-AO*        | -   | 107 | 1,058 | 163 |
| 457 | Sophorose-AO   | Glcβ-2Glc-AO   | -   | 115 | 73    | 12  |
| 458 | Gal            | Gal  | 179 | 28  | 35    | 4   |
| 459 | Gal-AO         | Gal-AO   | 19  | 166 | 10    | 6   |
| 460 | GalNAc         | GalNAc   | 367 | 127 | 146   | 23  |
| 461 | GalNAc-AO      | GalNAc-AO  | -   | 60  | 54    | 17  |
| 462 | Glc            | Glc  | 148 | 75  | 50    | 9   |

|     |                       |  |     |     |       |     |
|-----|-----------------------|--|-----|-----|-------|-----|
| 463 | Glc-AO                | Glc-AO   | -   | 106 | -     | 35  |
| 464 | GN                    | GlcNAc   | -   | 182 | 38    | 6   |
| 465 | GN-AO                 | GlcNAc-AO  | -   | 93  | 18    | 8   |
| 466 | Man                   | Man  | -   | 55  | 15    | 19  |
| 467 | Man-AO                | Man-AO   | 155 | 62  | 34    | 5   |
| 468 | Fuc                   | Fuc  | -   | 233 | 122   | 44  |
| 469 | Fuc-AO                | Fuc-AO   | -   | 109 | 37    | 3   |
| 470 | NeuAc                 | NeuAc  | -   | 72  | 32    | 1   |
| 471 | NeuAc-AO              | NeuAc-AO   | -   | 60  | 46    | 9   |
| 472 | NeuGc                 | NeuGc  | -   | 63  | 44    | 6   |
| 473 | NeuGc-AO              | NeuGc-AO   | -   | 5   | -     | 25  |
| 474 | Rha                   | Rha  | 129 | 6   | 38    | 7   |
| 475 | Rha-AO                | Rha-AO   | -   | 137 | 38    | 19  |
| 476 | Gal $\alpha$ -6Glc-AO | Gal $\alpha$ -6Glc-AO  | -   | 21  | 7     | 27  |
| 477 | (6P)-Glc-AO           | P-6Glc-AO  | -   | 190 | 20    | 33  |
| 478 | (6P)-Man              | P-6Man   | 229 | 29  | 65    | 2   |
| 479 | (6P)-Man-AO           | P-6Man-AO  | -   | 222 | 8     | 22  |
| 480 | (6P)-Man5             | P-6Man $\alpha$ -3Man $\alpha$ -3Man $\alpha$ -3Man $\alpha$ -2Man | -   | 33  | 3,403 | 173 |
| 481 | (6P)-Fructose-AO      | P-6Fructose-AO   | -   | 104 | 10    | 14  |
| 482 | SU-Tyr                | SU-Tyr   | -   | 121 | 806   | 68  |

|     |                  |  |     |     |        |       |
|-----|------------------|--|-----|-----|--------|-------|
| 483 | SU-Cholesterol   | SU-Cholesterol   | 52  | 6   | 8      | 21    |
| 484 | GN-Asn           | GlcNAc-Asn   | -   | 48  | 8,665  | 471   |
| 485 | Xyl3Glc4         | Glcβ-4Glcβ-4Glcβ-4Glc<br>                   <br>Xylα-6 Xylα-6 Xylα-6 | -   | 17  | 21     | 13    |
| 486 | GSC-284          | GalNAcβ-6Galβ-4Glcβ-Cer36<br> <br>NeuAcα-3                           | -   | 61  | 11     | 5     |
| 487 | GSC-575          | GalNAcβ-4Galβ-3Galβ-C30<br> <br>NeuAcα-3                             | -   | 300 | -      | 8     |
| 488 | GSC-70           | NeuAcα-6Galβ-6GalNAcβ-4Galβ-4Glcβ-Cer36                              | 66  | 61  | 10     | 29    |
| 489 | GSC-154          | NeuAcα-3Galβ-4GlcNAcβ-6Galβ-4Glcβ-Cer36<br> <br>Fucα-3               | 215 | 65  | 2      | 44    |
| 490 | GSC-446          | NeuAcα-3Galβ-4GlcNAcβ-6GalNAcα-3Galβ-4Glc-C30                        | 137 | 125 | 18     | 26    |
| 491 | GSC-441          | NeuAcα-3Galβ-4GlcNAcβ-6GalNAcα-3Galβ-4Glcβ-C30                       | 5   | 41  | -      | 15    |
| 492 | GSC-384          | NeuAcα-3Galβ-4GlcNAcβ-4GalNAcβ-3Galβ-4Glcβ-C30<br> <br>Fucα-3        | 22  | 94  | -      | -     |
| 493 | Glc(α6,α4,α4)    | Glcα-6Glcα-4Glcα-4Glc  | -   | 6   | -      | 14    |
| 494 | Glc(α6,α4,α4)-AO | Glcα-6Glcα-4Glcα-4Glc-AO   | -   | 72  | -      | 59    |
| 495 | O1-AO            | GlcNAcβ-3<br> <br>Gal-AO<br> <br>GlcNAcβ-6                           | -   | 49  | 24,240 | 1,323 |
| 496 | Rutinose-AO      | Rhaα-6Glc-AO   | -   | 47  | 7      | -     |

-, less than 1.

The oligosaccharide probes are all lipid-linked. Unless otherwise indicated they are NGLs prepared from reducing oligosaccharides by reductive amination with the amino lipid, 1,2-dihexadecyl-*sn*-glycero-3-phosphoethanolamine (DHPE). AO, NGLs prepared from reducing oligosaccharides by oxime ligation with an aminoxy (AO) functionalized DHPE (PMID: 17656321); Cer, natural glycolipids with various ceramide moieties; Cer36, synthetic glycolipids with ceramide having a total of 36 carbon atoms; C30, a synthetic lipid [2-(tetradecyl)hexadecanol] with 30 carbon atoms. OX and OY designate, respectively, the C1-4 fragment and the C5-6 fragments of GalNAcol of reduced oligosaccharides after mild periodate oxidation followed by reductive amination with DHPE (PMID: 12968363). ΔUA, 4,5-unsaturated hexuronic acid; aMan, 2,5-anhydro-mannose; aGal, 3,6-anhydro-galactose.

Asterisks that follow the names of certain probes indicate that predominant components are shown.