**Supplementary Data**

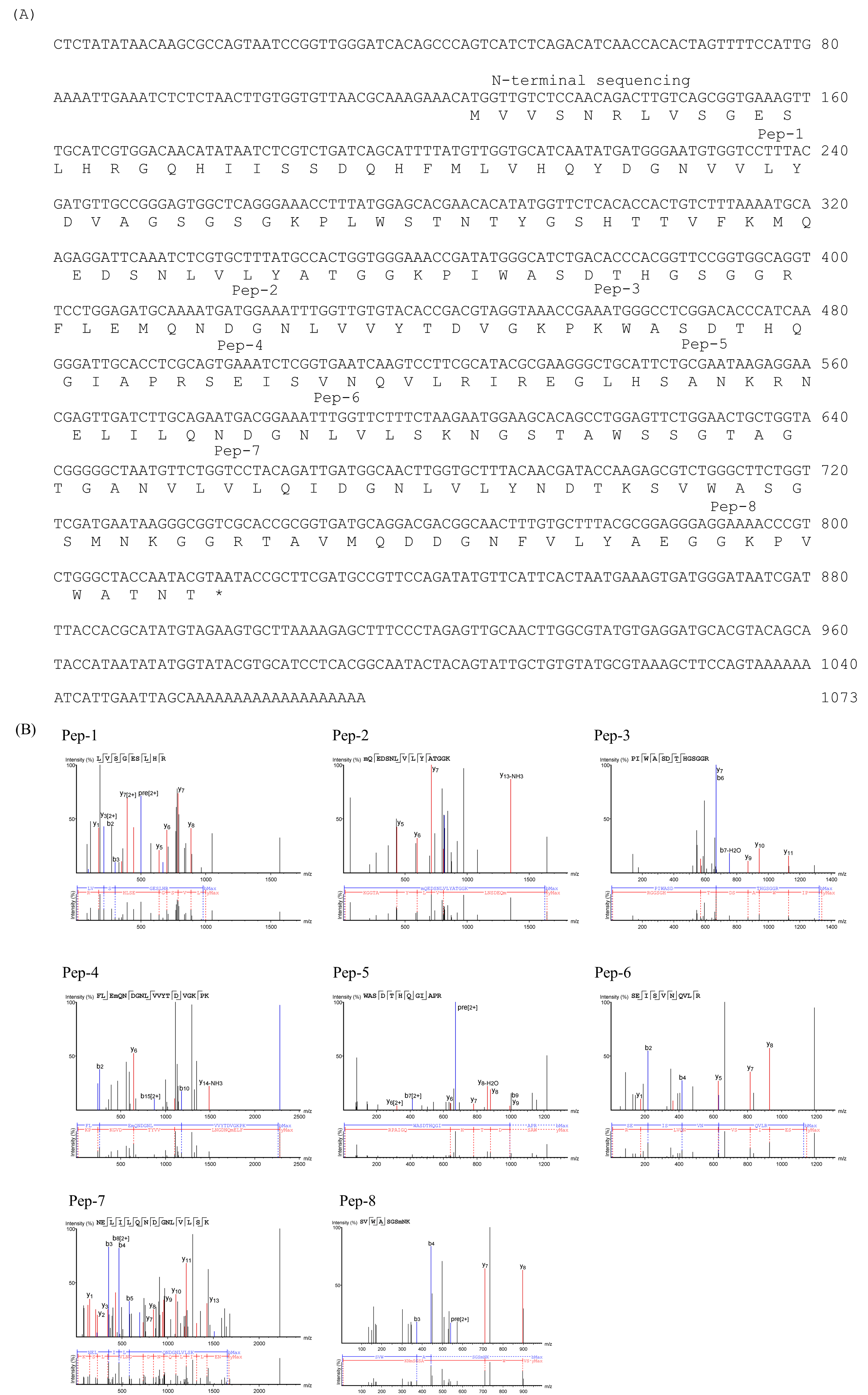
**Characterization of a novel mannose-binding lectin with antiviral activities from red alga, *Grateloupia chiangii***

Hyun-Ju Hwang1, Jin-Wook Han1, Hancheol Jeon1, Kichul Cho1, Ju-hee Kim2, Dae Sung Lee1 and Jong Won Han1,\*

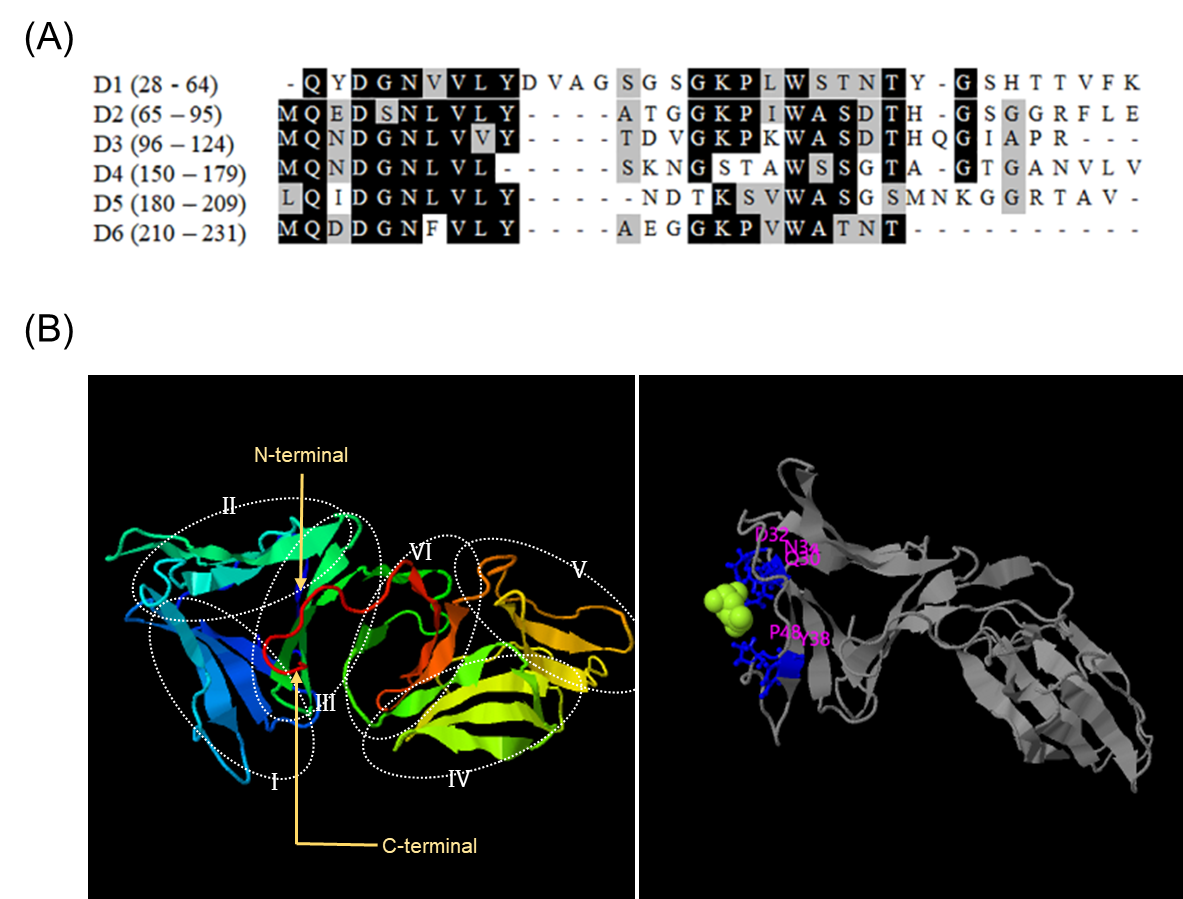
1Department of Genetic Resources Research, National Marine Biodiversity Institute of Korea, Seocheon 33662, South Korea

2Department of Ecology and Conservation, National Marine Biodiversity Institute of Korea, Seocheon 33662, South Korea

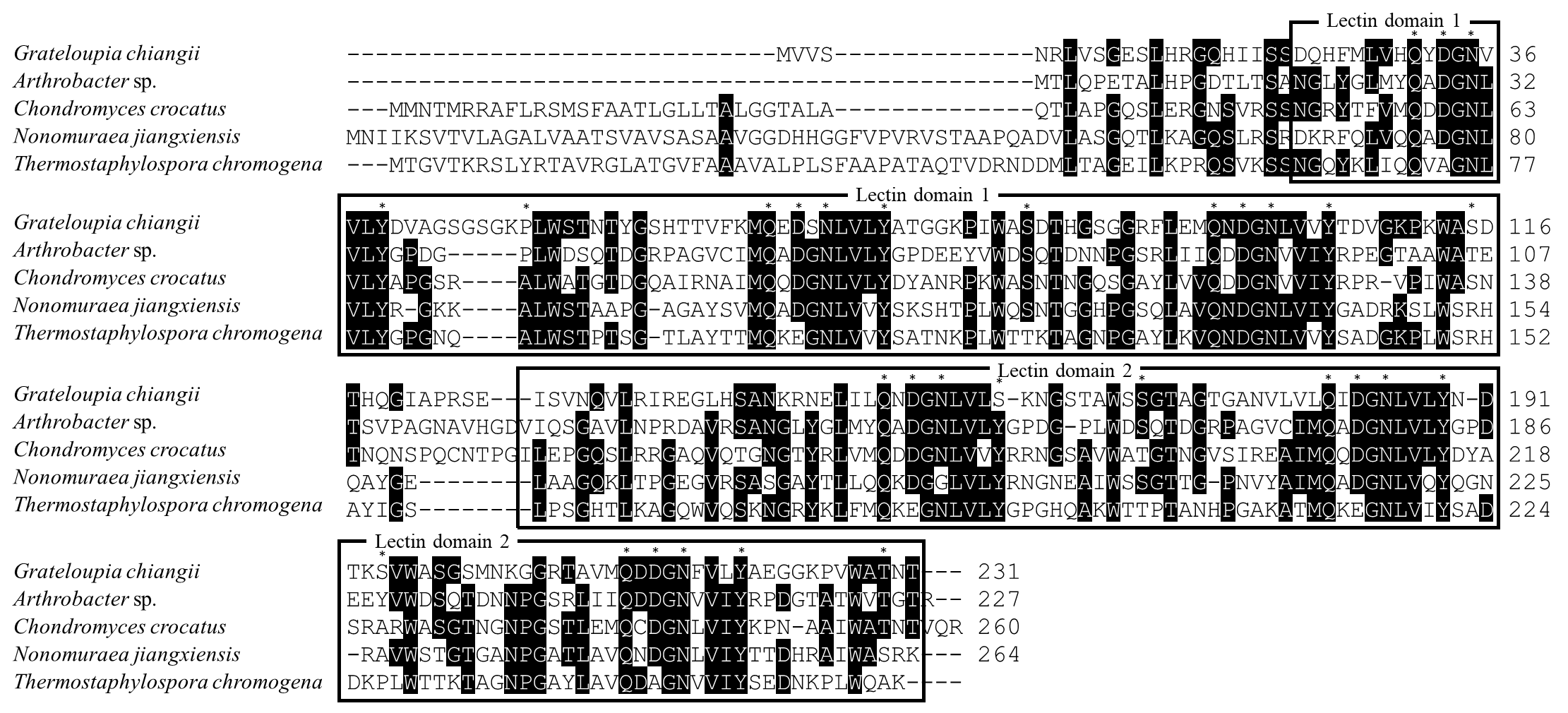
**\*Corresponding author:** J. W. Han; Phone: +82-41-950-0760; Fax: +82-41-950-0765; E-mail: jwhan@mabik.re.kr



**Figure S1.** cDNA and amino acid sequence of *Glateloupia* *chianggi* lectin (GCL). (A) Deduced GCL cDNA and amino acid sequences. N-terminal sequence information is boxed. The peptide sequences from LC-MS/MS are underlined. (B) Peptide sequences (Pep-1-8).



**Figure S2.** Tandem repeat structure of *Grateloupia chianggi* lectin. (A) Multiple alignment of tandem repeats. Black boxes indicate identical amino acids. (B) Schematic structural diagram of repeat domains (left side, I ~ IV), and ligand binding site (right side).



**Figure S3.** Multiple sequence alignment of GCL with related proteins from bacteria. The sequence alignment was generated by ClustalW alignment tool. Identical amino acids of the sequences are shaded in black. Predicted lectin domains are shown with boxes. The sequences were obtained from NCBI databank. *Grateloupia changii* (this study), *Arthrobacter* sp. (WP024366858), *Chondromyces crocatus* (AKT42434), *Nonomuraea jiangxiensis* (SDL12571), *Thermostaphylospora chromogena* (SDQ57287). Asterisks indicate ligand binding sites.

**Table S1.** Glycan microarray of native *Grateloupia chianggi* lectin (GCL), with binding signals normalized using a program provided by RayBioTech.

|  |  |  |  |
| --- | --- | --- | --- |
| **Substrate** | **Glycan structure** | **Normalized RFU** | |
| **Mean** | **SD** |
| **POS1** | **−** | 5,687 | 0 |
| **NEG** | **-** | 599 | 174 |
| **G0001** | β-Glc-Sp | 2,273 | 545 |
| **G0002** | β-Gal-Sp | 2,165 | 237 |
| **G0003** | α-Man-Sp | 2,093 | 295 |
| **G0004** | α-Fuc-Sp | 353 | 32 |
| **G0005** | α-Rha-Sp | 516 | 157 |
| **G0006** | β-GlcNAc-Sp | 1,104 | 134 |
| **G0007** | β-GalNAc-Sp | 820 | 60 |
| **G0008** | Tobramycin | 972 | 160 |
| **G0009** | Gal-β-1,3-GlcNAc-β-Sp | 397 | 37 |
| **G0010** | Gal-α-1,3-Gal-β-1,3-GlcNAc-β-Sp | 287 | 16 |
| **G0011** | Neu5Ac-α-2,3-Gal-β-1,3-GlcNAc-β-Sp | 571 | 34 |
| **G0012** | Neu5Ac-α-2,6-Gal-β-1,3-GlcNAc-β-Sp | 562 | 39 |
| **G0013** | Neu5Gc-α-2,3-Gal-β-1,3-GlcNAc-β-Sp | 478 | 108 |
| **G0014** | Neu5Gc-α-2,6-Gal-β-1,3-GlcNAc-β-Sp | 533 | 55 |
| **G0015** | Gal-β-1,3-(Fuc-α-1,4)-GlcNAc-β-[Lewis A]-Sp | 492 | 81 |
| **G0016** | Gal-β-1,4-Glc-β-Sp | 1,260 | 127 |
| **G0017** | Gal-α-1,3-Gal-β-1,4-Glc-β-Sp | 276 | 52 |
| **G0018** | Gal-α-1,4-Gal-β-1,4-Glc-β-Sp | 1,124 | 47 |
| **G0019** | GlcNAc-β-1,3-Gal-β-1,4-Glc-β-Sp | 546 | 27 |
| **G0020** | GalNAc-β-1,3-Gal-β-1,4-Glc-β-Sp | 1,092 | 92 |
| **G0021** | Neu5Ac-α-2,3-Gal-β-1,4-Glc-β-Sp | 315 | 45 |
| **G0022** | Neu5Ac-α-2,6-Gal-β-1,4-Glc-β-Sp | 606 | 48 |
| **G0023** | Neu5Gc-α-2,3-Gal-β-1,4-Glc-β-Sp | 579 | 74 |
| **G0024** | Neu5Ac-α-2,6-Gal-β-1,4-Glc-β-Sp | 665 | 139 |
| **G0025** | Gal-β-1,4-(Fuc-α-1,3)-Glc-β-Sp | 365 | 15 |
| **G0026** | GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-β-Sp | 186 | 22 |
| **G0027** | GlcNAc-β-1,6-GlcNAc-β-Sp | 396 | 41 |
| **G0028** | 4-P-GlcNAc-b-1,4-Man-b-Sp | 464 | 77 |
| **G0029** | Glc-α-1,2-Gal-α-1,3-Glc-α-Sp | 563 | 63 |
| **G0030** | Gal-β-1,3-GalNAc-α-Sp | 370 | 52 |
| **G0031** | Gal-β-1,4-GlcNAc-β-Sp | 735 | 59 |
| **G0032** | Gal-β-1,4-(Fuc-α-1,3)-GlcNAc-β-[Lewis X]–Sp | 509 | 64 |
| **G0033** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3)-GlcNAc-β-[sialyl Lewis X]-Sp | 400 | 123 |
| **G0034** | Neu5Ac-α-2,3-Gal-β-1,3-(Fuc-α-1,4)-GlcNAc-β-[sialyl Lewis A]-Sp | 234 | 21 |
| **G0035** | Neu5Gc-α-2,3-Gal-β-1,3-(Fuc-α-1,4)-GlcNAc-β-[sialyl Lewis A]-Sp | 216 | 52 |
| **G0036** | Gal-α-1,4-Gal-β-1,3-GlcNAc-β-Sp | 355 | 32 |
| **G0037** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-β-[LNnT]-Sp | 311 | 86 |
| **G0038** | GlcA-β-1,4-GlcNAc-α-1,4-GlcA-β-Sp | 321 | 37 |
| **G0039** | GlcNAc-β-1,6-(Gal-β-1,3)-GalNAc-α-O-Ser-Sp4 | 39 | 13 |
| **G0040** | Neu5Ac-α-2,3Gal-β-1,4-(6S)GlcNAc-β-Sp | 397 | 32 |
| **G0041** | GalNAc-β-1,4-GlcNAc-β-Sp2 | 458 | 55 |
| **G0042** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal β-1,4-Glc-β-Sp | 161 | 34 |
| **G0043** | Neu5Gc-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-β-Sp | 234 | 28 |
| **G0044** | GalNAc-α-1,3-(Fuc-α-1,2)-Gal-β-1,4-Glc-β-[blood A antigen tetrose]-Sp1 | 123 | 19 |
| **G0045** | GlcNAc-β-1,2-Man-α-Sp | 171 | 6 |
| **G0046** | Neu5Ac-α-2,3-Gal-β-Sp1 | 320 | 53 |
| **G0047** | Gal-β-1,3-GalNAc-β-1,3-Gal-β-Sp1 | 119 | 28 |
| **G0048** | Glc-α-1,2-Gal-α-Sp | 1,173 | 111 |
| **G0049** | Gal-β-1,4-(Fuc-α-1,3)-GlcNAc-β-1,3-Gal-β-Sp1 | 342 | 36 |
| **G0050** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3)-Glc-β-[3-sialyl-3-fucosyllactose/F-SL]-Sp1 | 223 | 31 |
| **G0051** | GlcNAc-β-1,4-GlcNAc-β-Sp1 | 460 | 74 |
| **G0052** | β-d-GlcA-Sp | 988 | 282 |
| **G0053** | Gal-β-1,4-(6S)GlNAc-β-Sp | 431 | 86 |
| **G0054** | GlcNAc-α-1,3-(Glc-α-1,2-Glc-α-1,2)-Gal-α-1,3-Glc-α-Sp | 208 | 43 |
| **G0055** | Gal-β-1,3-GalNAc-β-1,4-(Neu5Gc-α-2,3)-Gal-β-1,4-Glc-β-Sp1 | 222 | 14 |
| **G0056** | Sisomicin sulfate | 1,583 | 178 |
| **G0057** | GalNAc-α-1,3-(Fuc-α-1,2)-Gal-β-[blood A antigen trisaccharide]-Sp1 | 468 | 47 |
| **G0058** | Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-[blood H antigen trisaccharide]-Sp1 | 337 | 25 |
| **G0059** | Gal-α-1,3-(Fuc-α-1,2)-Gal-β-[blood B antigen trisaccharide]-Sp1 | 359 | 23 |
| **G0060** | Fuc-α-1,2-Gal-β-1,3-GlcNAc-β-1,3-Gal-β-1,4-Glc-β [LNFP I]-Sp1 | 737 | 83 |
| **G0061** | Fuc-α-1,2-Gal-β-1,4-Glc-β-[blood H antigen trisaccharide]-Sp1 | 313 | 39 |
| **G0062** | Gal-α-1,3-(Fuc-α-1,2)-Gal-β-1,4-Glc-β-[blood B antigen tetrasaccharide]-Sp1 | 213 | 15 |
| **G0063** | (Fuc-α-1,2)-Gal-β-1,4-(Fuc-α-1,3)-GlcNAc-β-[Lewis Y]-Sp1 | 300 | 21 |
| **G0064** | (Fuc-α-1,2)-Gal-β-1,3-(Fuc-α-1,4)-GlcNAc-β-[Lewis B]-Sp1 | 167 | 24 |
| **G0065** | Gal-β-1,3-(Fuc-α-1,4)-GlcNAc-β-1,3-Gal-β-1,4-(Fuc-α-1,4)-Glc-β-[Lewis A]-Sp1 | 194 | 23 |
| **G0066** | Gal-β-1,3-GalNAc-β-Sp1 | 148 | 26 |
| **G0067** | Gal-β-1,3-(Neu5Ac-α-2,6)-GalNAc-β-Sp | 355 | 36 |
| **G0068** | Neu5Ac-α-2,6-Gal-β-1,3-GalNAc-β-Sp | 468 | 25 |
| **G0069** | Neu5Ac-α-2,6-Gal-β-1,3-(Neu5Ac-α-2,6)-GalNAc-β-Sp | 423 | 46 |
| **G0070** | Neu5Ac-α-2,3-Gal-β-1,3-(Neu5Ac-α-2,6)-GalNAc-β-Sp | 294 | 29 |
| **G0071** | Neu5Ac-α-2,6-(Neu5Ac-α-2,3)-Gal-β-1,3-GalNAc-β-Sp | 422 | 30 |
| **G0072** | GalNAc-β-1,4-(Neu5Ac-α-2,3)-Gal-β-1,4-Glc-β-[GM2]-Sp | 421 | 39 |
| **G0073** | GalNAc-β-1,4-(Neu5Ac-α-2,8-Neu5Ac-α-2,3)-Gal-β-1,4-Glc-β-[GD2]-Sp | 35 | 6 |
| **G0074** | Gal-α-1,4-Gal-β-1,4-GlcNAc-β-Sp1 | 324 | 22 |
| **G0075** | β-d-Rha-Sp | 617 | 27 |
| **G0076** | Glc-α-1,4-Glc-β-Sp1 | 1,238 | 28 |
| **G0077** | Glc-α-1,6-Glc-α-1,4-Glc-β-Sp1 | 664 | 69 |
| **G0078** | Maltotriose-β-Sp1 | 854 | 10 |
| **G0079** | Glc-α-1,6-Glc-α-1,6-Glc-β-Sp1 | 794 | 16 |
| **G0080** | Maltotetraose-β-Sp1 | 2,577 | 352 |
| **G0081** | GlcNAc-α-1,4-GlcA-β-1,4-GlcNAc-α1,4-GlcA-β-Sp | 275 | 53 |
| **G0082** | Maltohexaose-β-Sp1 | 7,524 | 1,977 |
| **G0083** | Maltoheptaose-β-Sp1 | 8,132 | 1,811 |
| **G0084** | Acarbose-β-Sp1 | 730 | 94 |
| **G0085** | d-Pentamannuronic acid-β-Sp1 | 593 | 35 |
| **G0086** | l-Pentaguluronic acid-β-Sp1 | 801 | 39 |
| **G0087** | d-Cellose-β-Sp1 | 1,165 | 83 |
| **G0088** | Gal-α-1,3-Gal-β-Sp1 | 1,048 | 169 |
| **G0089** | β-1,4-Xylotetrose-Sp1 | 452 | 61 |
| **G0090** | Chitin-trisaccharide-Sp1 | 368 | 64 |
| **G0091** | KDN-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-β-Sp | 127 | 25 |
| **G0092** | Neu5Ac-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-Glc-β-Sp | 242 | 40 |
| **G0093** | Neu5Ac-α-2,8-Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-β-Sp3 | 85 | 38 |
| **G0094** | Neu5Ac-a-2,8-Neu5Ac-a-2,6-Gal-b-1,4-Glc-Sp5 | 25 | 10 |
| **G0095** | Gal-β-1,3-GalNAc-β-1,4-(Neu5Ac-α-2,3)-Gal-β-1,4-Glc-β-Sp1 | 175 | 14 |
| **G0096** | Gentamicin sulfate | 349 | 144 |
| **G0097** | Kanamycin sulfate | 870 | 188 |
| **G0098** | Geneticin disulfate salt (G418) | 146 | 29 |
| **G0099** | Neomycin trisulfate | 907 | 95 |
| **G0100** | SGP | 285 | 20 |
| **N010** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-(GlcNAc-β-1,2-Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 1,142 | 117 |
| **N011** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-(Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 1,148 | 174 |
| **N012** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-(Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 944 | 206 |
| **N013** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-(Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 989 | 194 |
| **N014** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-[Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 1,129 | 151 |
| **N015** | Man-α-1,6-(Man-α-1,3-)Man-α-1,6-[Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2- Man-α-1,3-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 562 | 61 |
| **N020** | GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 528 | 69 |
| **N021** | Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 456 | 79 |
| **N022** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 165 | 10 |
| **N023** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 201 | 13 |
| **N024** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 259 | 24 |
| **N025** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 96 | 8 |
| **N026** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 342 | 45 |
| **N022G** | Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 122 | 7 |
| **N023G** | Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 238 | 34 |
| **N025G** | Neu5Gc-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 100 | 8 |
| **N030** | Man-α-1,6-(GlcNAc-β-1,2-Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 634 | 89 |
| **N210** | GlcNAc-β-1,2-Man-α-1,6-[GlcNAc(3Ac)-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 425 | 82 |
| **N040** | GlcNAc-β-1,2-Man-α-1,6-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 123 | 9 |
| **N041** | Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 217 | 32 |
| **N042** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 136 | 5 |
| **N043** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 148 | 10 |
| **N044** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 174 | 18 |
| **N045** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,3-Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 164 | 19 |
| **N050** | GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 286 | 5 |
| **N051** | Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 205 | 17 |
| **N052** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 102 | 5 |
| **N053** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp | 86 | 12 |
| **N054** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 128 | 11 |
| **N055** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,2-Man-α-1,6-(Man-α-1,3-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-Sp5 | 97 | 3 |
| **TE001** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-Man-α-1,3-( Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 84 | 11 |
| **TE002** | Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 263 | 48 |
| **TE003** | Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 89 | 25 |
| **TE004** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 37 | 21 |
| **TE005** | Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 31 | 28 |
| **TE006** | Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 15 | 5 |
| **TE007** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 101 | 31 |
| **TE008** | Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 6 | 4 |
| **TE009** | Neu5Ac-α-2,8-Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,8-Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 7 | 6 |
| **TE010** | Neu5Gc-α-2,8-Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,8-Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 8 | 2 |
| **TE011** | Neu5Ac-α-2,8-Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,8-Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 10 | 5 |
| **TE012** | Neu5Gc-α-2,8-Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,8-Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 85 | 24 |
| **TE013** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 12 | 4 |
| **TE014** | Neu5Gc-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 3 |
| **TE015** | Neu5Ac-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 2 | 2 |
| **TE016** | Neu5Gc-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 11 | 4 |
| **TE017** | Neu5Ac-α-2,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Neu5Ac-α-2,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 5 | 2 |
| **TE018** | Neu5Gc-α-2,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Neu5Gc-α-2,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 5 | 2 |
| **TE019** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 6 | 2 |
| **TE020** | Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Neu5Gc-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 5 | 4 |
| **TE021** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Neu5AC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-[Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Neu5AC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 3 |
| **TE022** | Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Neu5GC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-[Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Neu5GC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 5 |
| **TE023** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-(Neu5AC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-[Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-(Neu5AC-α-2,6-)Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 19 | 7 |
| **TE024** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 211 | 44 |
| **TE025** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 56 | 13 |
| **TE026** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 94 | 20 |
| **TE027** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 8 | 6 |
| **TE028** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 46 | 20 |
| **TE029** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 7 | 3 |
| **TE030** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 32 | 19 |
| **TE031** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 2 |
| **TE032** | GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 104 | 35 |
| **TE033** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 11 | 4 |
| **TE034** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 3 | 3 |
| **TE035** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 15 | 7 |
| **TE036** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 2 | 2 |
| **TE037** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 7 | 5 |
| **TE038** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 3 | 1 |
| **TE039** | Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 5 |
| **TE040** | GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 148 | 28 |
| **TE041** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 8 | 3 |
| **TE042** | Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 5 | 6 |
| **TE043** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 18 | 3 |
| **TE044** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 3 | 2 |
| **TE045** | Gal-α-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-α-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 4 | 3 |
| **TE046** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 5 | 2 |
| **TE047** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 6 | 4 |
| **TE048** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 1 | 0 |
| **TE049** | Gal-α-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,3-[Gal-α-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fucα-1,3-)GlcNAc-β-1,2-Man-α-1,6-]Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 9 | 4 |
| **TE050** | Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,3-(Gal-α-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,2-Man-α-1,6-)Man-β-1,4-GlcNAc-β-1,4-GlcNAc-β-Asn | 2 | 2 |
| **H0100** | GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 212 | 9 |
| **H0101** | Gal-β-1,4-GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 112 | 14 |
| **H0103** | Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 95 | 12 |
| **H0105** | Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-1,3-(Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 63 | 8 |
| **H0106** | Fuc-α-1,2-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-[Fuc-α-1,2-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,6-]Gal-β-1,4-Glc-Sp5 | 39 | 2 |
| **H0200** | Gal-β-1,4-GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 82 | 9 |
| **H0201** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 128 | 10 |
| **H0202** | Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 129 | 20 |
| **H0203** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 93 | 1 |
| **H0204** | Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 81 | 15 |
| **H0205** | Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 96 | 9 |
| **H0207** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 114 | 6 |
| **H0208** | Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 123 | 10 |
| **H0209** | Fuc-α-1,2-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 95 | 13 |
| **H0210** | Fuc-α-1,2-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-[Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,6-]Gal-β-1,4-Glc-Sp5 | 150 | 31 |
| **H0300** | GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 166 | 12 |
| **H0301** | GlcNAc-β-1,3-(Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 132 | 23 |
| **H0303** | GlcNAc-β-1,3-[Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,6-]Gal-β-1,4-Glc-Sp5 | 85 | 11 |
| **H0304** | Fuc-α-1,2-GlcNAc-β-1,3-(Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 92 | 9 |
| **H0305** | Gal-β-1,4-GlcNAc-β-1,3-(Neu5Ac-α-2,6-Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 68 | 8 |
| **H0306** | Gal-β-1,4-GlcNAc-β-1,3-(Neu5Gc-α-2,6-Gal-β-1,4-GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 94 | 13 |
| **H0307** | Gal-β-1,4-GlcNAc-β-1,3-[Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,6-]Gal-β-1,4-Glc-Sp5 | 94 | 11 |
| **H0400** | Gal-β-1,4-Glc-Sp | 1,044 | 110 |
| **H0402** | GalNAc-β-1,3-Gal-β-1,4-Glc-Sp | 270 | 50 |
| **H0403** | Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp | 468 | 37 |
| **H0404** | Neu5Gc-α-2,3-Gal-β-1,4-Glc-Sp | 396 | 38 |
| **H0405** | Neu5Ac-α-2,6-Gal-β-1,4-Glc-Sp | 412 | 29 |
| **H0406** | Neu5Gc-α-2,6-Gal-β-1,4-Glc-Sp | 426 | 46 |
| **H0407** | Gal-α-1,3-Gal-β-1,4-Glc-Sp | 271 | 26 |
| **H0408** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp | 107 | 42 |
| **H0409** | Neu5Ac-α-2,8-Neu5Ac-α-2,6-Gal-β-1,4-Glc-Sp | 148 | 35 |
| **H0410** | Neu5Ac-α-2,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp | 191 | 32 |
| **H0411** | Neu5Ac-α-2,6-Gal-α-1,3-Gal-β-1,4-Glc-Sp | 281 | 50 |
| **H0500** | Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 260 | 19 |
| **H0503** | GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 164 | 6 |
| **H0504** | Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 110 | 7 |
| **H0505** | Fuc-α-1,2-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 97 | 8 |
| **H0600** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 103 | 14 |
| **H0601** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 153 | 9 |
| **H0602** | Fuc-α-1,2-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 129 | 13 |
| **H0603** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 170 | 14 |
| **H0604** | Neu5Ac-α-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 116 | 20 |
| **H0606** | Gal-β-1,4-GlcNAc-β-1,3-(Neu5Ac-α-2,6-)Gal-β-1,4-Glc-Sp5 | 160 | 8 |
| **H0608** | Fuc-α-1,2-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 144 | 7 |
| **H0609** | Neu5Ac-α-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 166 | 15 |
| **H0610** | GlcNAc-β-1,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 279 | 24 |
| **H0700** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 103 | 13 |
| **H0701** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 174 | 21 |
| **H0800** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 115 | 13 |
| **H0900** | Gal-β-1,3-GlcNAc-β-1,3-(GlcNAc-β-1,6-)Gal-β-1,4-Glc-Sp5 | 223 | 24 |
| **L1001** | Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp5 | 78 | 21 |
| **L1002** | Neu5Gc-α-2,3-Gal-β-1,4-Glc-Sp5 | 162 | 27 |
| **L1003** | Kdn-α-2,3-Gal-β-1,4-Glc-Sp5 | 190 | 12 |
| **L1011** | Neu5Ac-a-2,3-(GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 60 | 17 |
| **L1012** | Neu5Gc-a-2,3-(GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 67 | 14 |
| **L1013** | Kdn-a-2,3-(GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 79 | 20 |
| **L1021** | Neu5Ac-a-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 58 | 14 |
| **L1022** | Neu5Gc-a-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 81 | 7 |
| **L1023** | Kdn-a-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-b-1,4-Glc-Sp5 | 173 | 32 |
| **L1201** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp5 | 83 | 24 |
| **L1202** | Neu5Gc-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp5 | 136 | 16 |
| **L1203** | Kdn-α-2,8-Neu5Ac-α-2,3-Gal-β-1,4-Glc-Sp5 | 117 | 13 |
| **L1204** | Neu5Ac-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-Glc-Sp5 | 64 | 29 |
| **L1205** | Neu5Gc-α-2,8-Neu5Gc-α-2,3-Gal-β-1,4-Glc-Sp5 | 70 | 25 |
| **L1206** | Kdn-α-2,8-Neu5Gc-α-2-,3-Gal-β-1,4-Glc-Sp5 | 65 | 27 |
| **L1207** | Neu5Ac-α-2,8-Kdn-α-2,3-Gal-β-1,4-Glc-Sp5 | 58 | 21 |
| **L1209** | Kdn-α-2,8-Kdn-α-2,3-Gal-β-1,4-Glc-Sp5 | 90 | 23 |
| **L1211** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 39 | 18 |
| **L1212** | Neu5Gc-α-2,8-Neu5Ac-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 49 | 20 |
| **L1213** | Kdn-α-2,8-Neu5Ac-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 44 | 19 |
| **L1214** | Neu5Ac-α-2,8-Neu5Gc-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 35 | 11 |
| **L1215** | Neu5Gc-α-2,8-Neu5Gc-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 32 | 23 |
| **L1216** | Kdn-α-2,8-Neu5Gc-α-2,3-(GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 38 | 23 |
| **L1221** | Neu5Ac-α-2,8-Neu5Ac-α-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 24 | 10 |
| **L1222** | Neu5Gc-α-2,8-Neu5Ac-α-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 64 | 23 |
| **L1225** | Neu5Gc-α-2,8-Neu5Gc-α-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 93 | 22 |
| **L1226** | Kdn-α-2,8-Neu5Gc-α-2,3-(Gal-b-1,3-GalNAc-b-1,4-)Gal-β-1,4-Glc-Sp5 | 103 | 18 |
| **L2000** | GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 449 | 33 |
| **L2100** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 114 | 15 |
| **L2101** | Gal-a-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 107 | 16 |
| **L2102** | Gal-a-1,4-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 125 | 20 |
| **L2111** | Neu5Ac-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 97 | 15 |
| **L2112** | Neu5Gc-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 28 | 8 |
| **L2113** | Kdn-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 63 | 11 |
| **L2121** | Neu5Ac-a-2,8-Neu5Ac-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 58 | 19 |
| **L2122** | Neu5Gc-a-2,8-Neu5Ac-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 78 | 15 |
| **L2103** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 122 | 15 |
| **L2104** | Gal-a-1,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 96 | 16 |
| **L2131** | Neu5Ac-a-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 112 | 17 |
| **L2132** | Neu5Gc-a-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 82 | 12 |
| **L2133** | Kdn-a-2,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 95 | 12 |
| **L2191** |  | 77 | 27 |
| **L2192** |  | 64 | 16 |
| **L2200** | GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 103 | 16 |
| **L2300** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 90 | 15 |
| **L2301** | Gal-a-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 78 | 14 |
| **L2302** | Gal-a-1,4-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 81 | 14 |
| **L2311** | Neu5Ac-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 66 | 9 |
| **L2312** | Neu5Gc-a-2,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 74 | 12 |
| **L2303** | Gal-β-1,4-GlcNAc-β-1,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 77 | 13 |
| **L2304** | Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-(Fuc-α-1,3-)GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 80 | 16 |
| **L2391** |  | 74 | 21 |
| **L2392** |  | 90 | 10 |
| **L2900** | Gal-β-1,3-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 340 | 49 |
| **L2911** | Neu5Ac-a-2,3-Gal-β-1,3-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 127 | 26 |
| **L2912** | Neu5Gc-a-2,3-Gal-β-1,3-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 149 | 24 |
| **L2913** | Kdn-a-2,3-Gal-β-1,3-GlcNAc-β-1,3-Gal-β-1,4-Glc-Sp5 | 134 | 20 |
| **L3100** | Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 150 | 25 |
| **L3101** | GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 103 | 19 |
| **L3102** | Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 100 | 17 |
| **L3111** | Neu5Ac-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 62 | 11 |
| **L3112** | Neu5Gc-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 73 | 18 |
| **L3113** | Kdn-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,4-Gal-β-1,4-Glc-Sp5 | 89 | 30 |
| **L3103** |  | 98 | 20 |
| **L3200** | Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 140 | 34 |
| **L3201** | GalNAc-β-1,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 117 | 13 |
| **L3202** | Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 87 | 14 |
| **L3211** | Neu5Ac-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 77 | 16 |
| **L3212** | Neu5Gc-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 81 | 20 |
| **L3213** | Kdn-a-2,3-Gal-β-1,3-GalNAc-β-1,3-Gal-α-1,3-Gal-β-1,4-Glc-Sp5 | 88 | 16 |