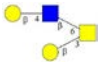
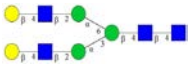
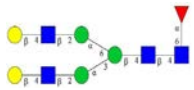
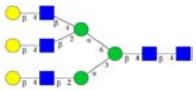
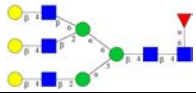
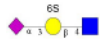
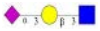
# Supporting Information

## Table S1. Glycans on the custom glycan array (Fig. 1)

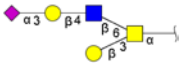
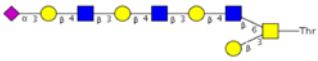
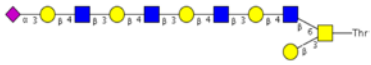
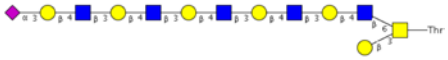
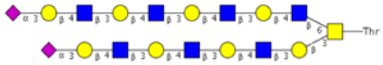
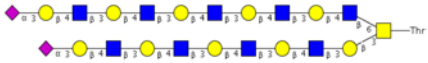
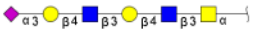
| | |
|---|---|
| 10 | non-sialylated |
| 69 | 2,3-linked Sia |
| 56 | 2,6-linked Sia |
| 135 | total |

| Glycan # | Common Name | Structure |
|---|---|---|
| 1 | Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 2 | Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 3 | Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 4 | Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 5 | Galβ(1-4)GlcNAcβ(1-3)[Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 | |
| 6 | Galβ(1-4)GlcNAcβ(1-6)GalNAc□-Thr-NH2 | |
| 7 | Galβ(1-4)GlcNAcβ(1-2)Man□ (1-3)[Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 8 | Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-Asn-Ser-Thr-NH2 |  |
| 9 | Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){Galβ(1-4)GlcNAcβ(1-2)[Galβ(1-4)GlcNAcβ(1-2)]-Man□(1-6)}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-Lys-NH2 |  |
| 10 | Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){Galβ(1-4)GlcNAcβ(1-2)[Galβ(1-4)GlcNAcβ(1-2)]-Man□(1-6)}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 11 | NeuAc□(2-3)Galβ(1-4)6-O-sulfo-GlcNAcβ-propyl-NH2 | |
| 12 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-6-O-sulfo-GlcNAcβ-propyl-NH2 | |

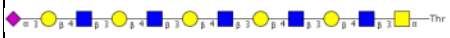
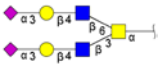
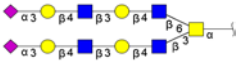
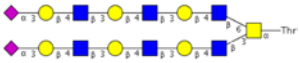
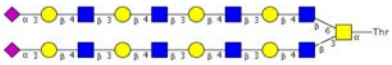
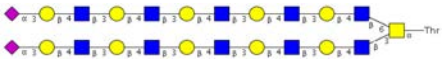
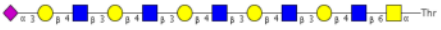
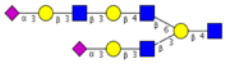
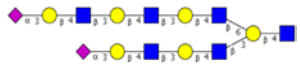
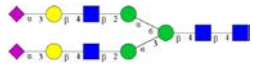
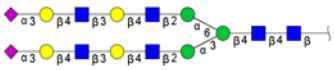
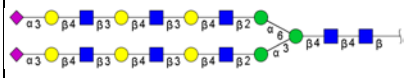
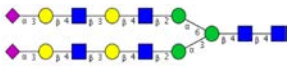
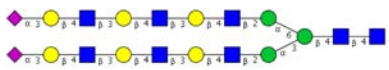
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 13 | NeuAc□(2-3)6-O-sulfo-Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 14 | NeuAc□(2-3)6-O-sulfo-Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ-propyl-NH2 | |
| 15 | NeuAc□(2-3)Galβ(1-3)6-O-sulfo-GlcNAcβ-propyl-NH2 | |
| 16 | NeuAc□(2-3)Galβ(1-4)Glcβ-ethyl-NH2 |  |
| 17 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 18 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 19 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 20 | NeuAc□(2-3)GalNAcβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 21 | NeuAc□(2-3)Galβ(1-3)GlcNAcβ-ethyl-NH2 |  |
| 22 | NeuAc□(2-3)Galβ(1-3)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 23 | NeuAc□(2-3)Galβ(1-3)GlcNAcβ(1-3)Galβ(1-3)GlcNAcβ-ethyl-NH2 | |
| 24 | NeuAc□(2-3)Galβ(1-3)GalNAcβ(1-3)Gal□(1-4)Galβ(1-4)Glcβ-ethyl-NH2 | |
| 25 | NeuAc□(2-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 26 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 27 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |

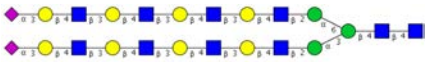
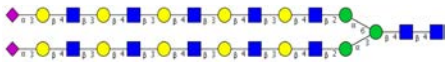
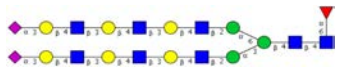
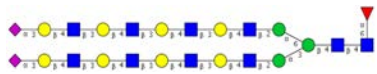
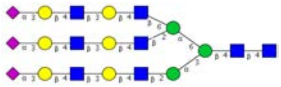
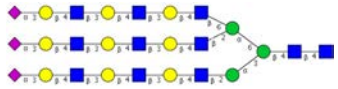
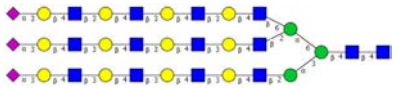
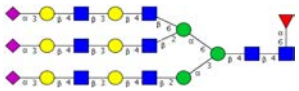
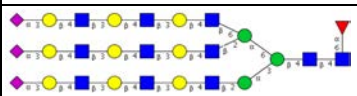
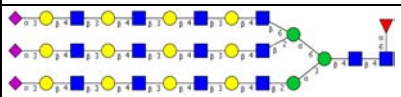
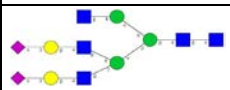
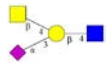
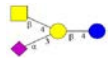
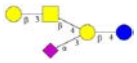
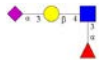
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 28 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 29 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 30 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 31 | NeuAc□(2-3)Galβ(1-3)[GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 | |
| 32 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 33 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 | |
| 34 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 35 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 36 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 37 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 38 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 39 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 40 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 |  |
| 41 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 42 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |

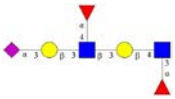
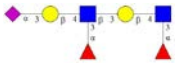
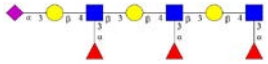
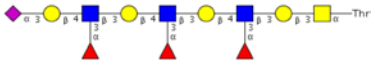
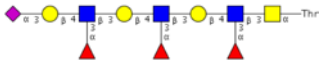
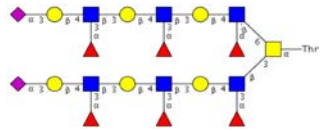
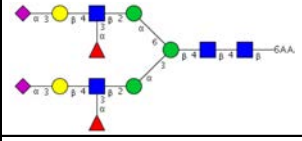
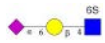
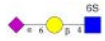
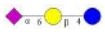
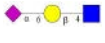
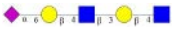
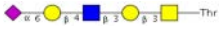
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 43 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 |  |
| 44 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 45 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 46 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 47 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 48 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 49 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)GalNAc□-Thr-NH2 | |
| 50 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)GalNAc□-Thr-NH2 |  |
| 51 | NeuAc□(2-3)Galβ(1-3)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-3)Galβ(1-3)GlcNAcβ(1-3)] Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 52 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)] Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 53 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 54 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 55 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 56 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 57 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Manα(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |

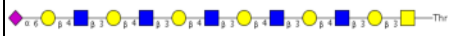
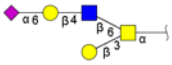
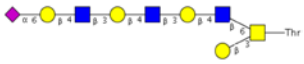
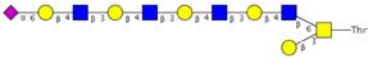
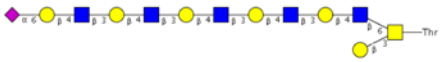
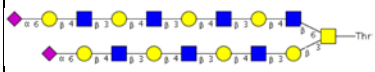
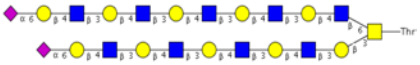
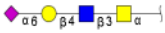
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 58 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Manα(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 59 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 60 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fucα(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 61 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAcα(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Manα(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fucα(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 62 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Manα(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 63 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Manα(1-3){NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 64 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAcα(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAcα(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 65 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 66 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 67 | NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAcα(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 68 | Gn/3'SLN/3'SLN-TriN |  |
| 69 | NeuAc□(2-3)[GalNAcβ(1-4)]-Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 70 | NeuAc□(2-3)[GalNAcβ(1-4)]-Galβ(1-4)Glcβ-ethyl-NH2 |  |
| 71 | Galβ(1-3)GalNAcβ(1-4)[NeuAc□(2-3)]-Galβ(1-4)Glcβ-ethyl-NH2 |  |
| 72 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ-propyl-NH2 |  |

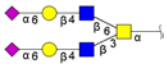
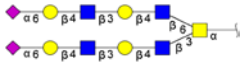
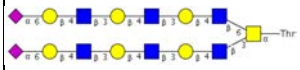
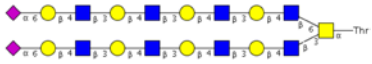
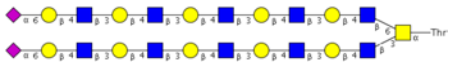
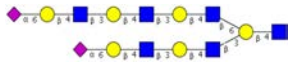
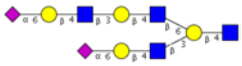
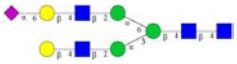
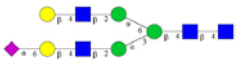
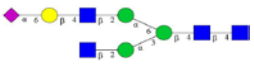
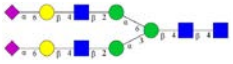
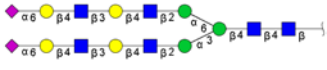
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 73 | NeuAc□(2-3)Galβ(1-3)[Fuc□(1-4)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ-ethyl-NH2 |  |
| 74 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ-ethyl-NH2 |  |
| 75 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ-ethyl-NH2 |  |
| 76 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 |  |
| 77 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)GalNAc□-Thr-NH2 |  |
| 78 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)[NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 79 | NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-3)Galβ(1-4)[Fuc□(1-3)]-GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-(Lys-Thr)NH2 |  |
| 80 | NeuAc□(2-6)Galb(1-4)(6S)GlcNacb-ethyl-NH2 |  |
| 81 | NeuAc□(2-6)Galβ(1-4)6-O-sulfo-GlcNAcβ-propyl-NH2 |  |
| 82 | NeuAc□(2-6)Galβ(1-4)Glcβ-ethyl-NH2 |  |
| 83 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 84 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 85 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 86 | NeuAc□(2-6)GalNAcβ(1-4)GlcNAcβ-ethyl-NH2 | |
| 87 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 |  |

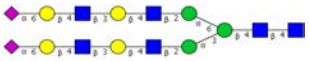
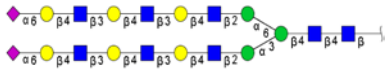
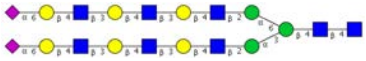
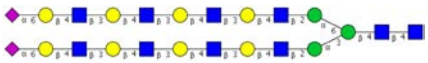
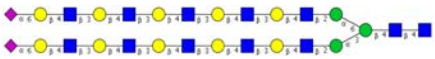
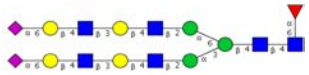
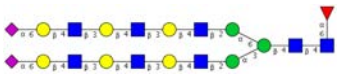
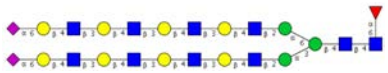
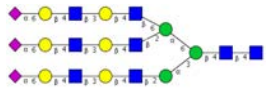
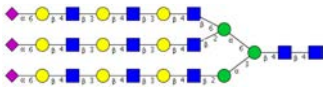
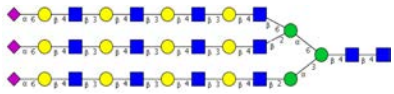
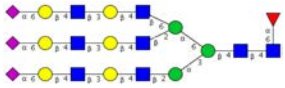
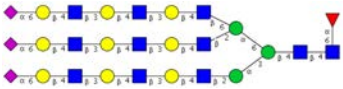
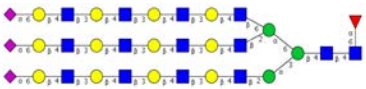
## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 88 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 89 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 90 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 | |
| 91 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)GalNAc□-Thr-NH2 |  |
| 92 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 93 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 | |
| 94 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 95 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 96 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 97 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 98 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-3)]-GalNAc□-Thr-NH2 |  |
| 99 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 |  |
| 100 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 101 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 102 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |

## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 103 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)GalNAc□-Thr-NH2 | |
| 104 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 105 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 106 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 107 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 108 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)]-GalNAc□-Thr-NH2 |  |
| 109 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)GalNAc□-Thr-NH2 | |
| 110 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)GalNAc□-Thr-NH2 | |
| 111 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)] Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 112 | NeuAc□(2-6)Galβ(1-3)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)[NeuAc□(2-6)Galβ(1-3)GlcNAcβ(1-3)] Galβ(1-4)GlcNAcβ-ethyl-NH2 |  |
| 113 | Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 114 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 115 | GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 116 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-2)Manα(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 117 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |

## Table S1. Continued

| Glycan # | Common Name | Structure |
|---|---|---|
| 118 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 119 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-Asn-NH2 |  |
| 120 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Manα(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 121 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 122 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 123 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 124 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 125 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-6)]-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 126 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 127 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 128 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 129 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Man□(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 130 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Manα(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |
| 131 | NeuAc□(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)Man□(1-3){NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-2)[NeuAcα(2-6)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-3)Galβ(1-4)GlcNAcβ(1-6)Manα(1-6)]}-Manβ(1-4)GlcNAcβ(1-4)[Fuc□(1-6)]-GlcNAcβ-(Lys-Val-Ala)Asn-Lys-Thr-NH2 |  |

## Table S1. Continued

| Glycan # | Common Name | Structure |
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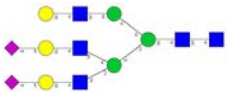
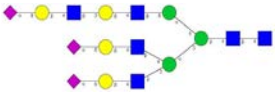
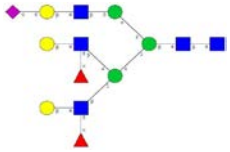
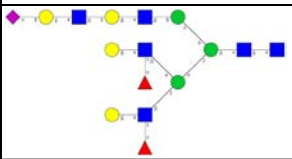
| 132 | LN/6'SLN/6'SLN-TriN |  |
| 133 | 6'SLNLN/6'SLN/6'SLN-TriN |  |
| 134 | 6'SLN/LeX/LeX-TriN |  |
| 135 | 6'SLNLN/LeX/LeX-TriN |  |