###### Supplementary Tables:

**Supplementary Table 1: Plasma neutralization breadth, viral loads and duration of infection**

Shown are all of the individuals with broad, non-broad and intermediate neutralization used in this study. Viral loads at 6 months post-infection were used to match the groups. Peak percentage breadth for individuals with bNAbs is the earliest time point at which breadth was obtained. Whereas peak breadth for the individuals with no bNAbs is the latest time point at which breadth was obtained. Participants highlighted in red were used for the gp120 competition assay.

|  |  |  |
| --- | --- | --- |
| **bNAbs** | **No-bNAbs** | **Intermediates** |
| **PTID** | **VL (6 mnths)** | **Peak Breadth (%)** | **Time of Peak Breadth (years)** | **Time of ARV or LTFU (years)** | **PTID** | **VL (6 mnths)** | **Peak Breadth (%)** | **Time of Peak Breadth (years)** | **Time of ARV or LTFU (years)** | **PTID** | **VL (6 mnths)** | **Peak Breadth (%)** | **Time of Peak Breadth (years)** | **Time of ARV or LTFU (years)** |
| CAP008 | 98 400 | 39% | 3 | 4 | CAP65 | 47 300 | 0% | 5 | 7 | CAP244 | 47 300 | 22% | 4 | n/a |
| CAP177 | 32 300 | 56% | 3 | 7 | CAP88 | 21 100 | 0% | 5 | 6 | CAP295 | 19 100 | 17% | 5 | n/a |
| CAP206 | 156 000 | 44% | 3 | 5 | CAP137 | 1 500 | 0% | 3 | 4 | CAP332 | 21 100 | 22% | 3 | 4 |
| CAP248 | 1 290 | 72% | 5 | 7 | CAP200 | 349 000 | 6% | 3 | 4 | **Median** | 21 100 | 22% | 4 | 4 |
| CAP255 | 59 500 | 61% | 3 | 4 | CAP221 | 3 830 | 0% | 3 | 4 |  |  |  |  |  |
| CAP256 | 750 000 | 83% | 3 | 5 | CAP225 | 59 700 | 6% | 5 | 6 |  |  |  |  |  |
| CAP257 | 16 900 | 94% | 4 | 5 | CAP229 | 8 470 | 6% | 5 | n/a |  |  |  |  |  |
| CAP287 | 39 500 | 50% | 4 | 5 | CAP268 | 15 100 | 0% | 4 | 5 |  |  |  |  |  |
| CAP310 | 171 000 | 33% | 2 | 3 | CAP283 | 66 300 | 0% | 2 | 3 |  |  |  |  |  |
| CAP312 | 40 400 | 56% | 3 | n/a | CAP289 | 62 300 | 6% | 3 | 5 |  |  |  |  |  |
| CAP314 | 215 000 | 44% | 2 | 3 | CAP290 | 72 200 | 6% | 2 | 3 |  |  |  |  |  |
| CAP322 | 92 200 | 39% | 2 | 4 | CAP305 | 67 200 | 0% | 4 | 5 |  |  |  |  |  |
| **Median** | 75 850 | 53% | 3 | 5 | **Median** | 53 500 | 0% | 4 | 5 |  |  |  |  |  |

**Supplementary Table 2: List of all glycan components spotted onto the glycan arrays**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Glycan Type** | **Glycan Name** | **Description** | **Linker** | **Core** | **Sugar Ratio** |
| Blood Group A | 2'F-A type 2-Sp - 05 | GalNAca1-3[Fuca1-2]Galb1-4[Fuca1-3]GlcNAcb-Sp | Sp | BSA | 5 |
| Blood Group A | 2'F-A type 2-Sp - 13 | GalNAca1-3[Fuca1-2]Galb1-4[Fuca1-3]GlcNAcb-Sp | Sp | BSA | 13 |
| Blood Group B | 2'F-B type 2-Sp - 03 | Gala1-3[Fuca1-2]Galb1-4[Fuca1-3]GlcNAcb-Sp | Sp | BSA | 3 |
| Blood Group B | 2'F-B type 2-Sp - 07 | Gala1-3[Fuca1-2]Galb1-4[Fuca1-3]GlcNAcb-Sp | Sp | BSA | 7 |
| Blood Group B | 2'F-B type 2-Sp - 15 | Gala1-3[Fuca1-2]Galb1-4[Fuca1-3]GlcNAcb-Sp | Sp | BSA | 15 |
| Blood Group H | 2'FucLac (BG-H5) | Fuca1-2Galb1-4Glc-BSA  | 3 atom | BSA | 7 |
| carb-Sia | 3'SLacNAc | Sialyla2-3Galb1-4GlcNAc - BSA (3'SLacNAc) | NA | BSA | 19 |
| carb-GlcNAc | 3'GN type1-Sp - 04 | GlcNAcb1-3Galb1-3GlcNAcb-Sp | Sp | BSA | 4 |
| carb-GlcNAc | 3'GN type1-Sp - 16 | GlcNAcb1-3Galb1-3GlcNAcb-Sp | Sp | BSA | 16 |
| carb-GlcNAc | 3'GN-Di-LacNAc-Sp - 06 | GlcNAcb1-3(Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 6 |
| carb-GlcNAc | 3'GN-Di-LacNAc-Sp - 14 | GlcNAcb1-3(Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 14 |
| carb-Sia | 3'KDNLacNAc-Sp - 05 | KDNa2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 3'KDNLacNAc-Sp - 12 | KDNa2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 12 |
| carb-Sia | 3'-KDNLeC-Sp - 04 | KDNa2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 4 |
| carb-Sia | 3'-KDNLeC-Sp - 12 | KDNa2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 12 |
| carb-Sia | 3'S(Gc)LacNAc-Sp - 06 | Neu5Gca2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 6 |
| carb-Sia | 3'S(Gc)LacNAc-Sp - 10 | Neu5Gca2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 10 |
| carb-Sia | 3'S(Gc)LeC-Sp - 05 | Neu5Gca2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 3'S(Gc)LeC-Sp - 12 | Neu5Gca2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 12 |
| carb-Sia | 3'S-Di-LacNAc-Sp - 06 | Neu5Aca2-3(Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 6 |
| carb-Sia | 3'S-Di-LacNAc-Sp - 13 | Neu5Aca2-3(Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 13 |
| carb-Sia | 3'Sia-3-FL | Siaa2-3Galb1-4(Fuca1-3)Glc -BSA | 3 atom | BSA | 7 |
| carb-Sia | 3'SLacNAc-Sp - 05 | Neu5Aca2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 3'SLacNAc-Sp - 10 | Neu5Aca2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 10 |
| carb-Sia | 3'SLDN-Sp - 05 | Neu5Aca2-3GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 3'SLDN-Sp - 11 | Neu5Aca2-3GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 11 |
| carb-Sia | 3'SLeC-Sp - 05 | Neu5Aca2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 3'SLeC-Sp - 12 | Neu5Aca2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 12 |
| Lewis | 3'-sulpho-LeA | 3-SO3-Galb1-3[Fuca1-4)GlcNAc- | 3 atom | BSA | 15 |
| Lewis | 3'-sulpho-LeX | 3-SO3-Galb1-4[Fuca1-3)GlcNAc- | 3 atom | BSA | 15 |
| carb-Sia | 6'SLac | Sialyla2-6Galb1-4Glc-APD-HSA (6'Slac) | APD | HSA |   |
| carb-Sia | 6'S(Gc)LacNAc-Sp - 05 |   |   |   |   |
| carb-Sia | 6'S(Gc)LacNAc-Sp - ## (High) | Neu5Gca2-6Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 6'S-Di-LacNAc-Sp - 05 | Neu5Aca2-6[Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 5 |
| carb-Sia | 6'S-Di-LacNAc-Sp - 13 | Neu5Aca2-6[Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 13 |
| carb-Sia | 6'SLacNAc-Sp - 05 | Neu5Aca2-6Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 6'SLacNAc-Sp - 11 | Neu5Aca2-6Galb1-4GlcNAcb-Sp | Sp | BSA | 11 |
| carb-Sia | 6'SLDN-Sp - 05 | Neu5Aca2-6GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 6'SLDN-Sp - 13 | Neu5Aca2-6GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 13 |
| Lewis | 6'-sulpho-LeA | 6-SO3-Galb1-3[Fuca1-4)GlcNAc- | 3 atom | BSA | 16 |
| Lewis | 6'-sulpho-LeX | 6-SO3-Galb1-4[Fuca1-3)GlcNAc- | 3 atom | BSA | 8 |
| carb-Sia | 9OAc3'SLacNAc-Sp - 04 | Neu5Ac(9Ac)a2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 4 |
| carb-Sia | 9OAc3'SLacNAc-Sp - 10 | Neu5Ac(9Ac)a2-3Galb1-4GlcNAcb-Sp | Sp | BSA | 10 |
| carb-Sia | 9OAc3'SLeC-Sp - 05 | Neu5Ac(9Ac)a2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | 9OAc3'SLeC-Sp - 12 | Neu5Ac(9Ac)a2-3Galb1-3GlcNAcb-Sp | Sp | BSA | 12 |
| Blood Group A | A tetra type 1-Sp - 05 | GalNAca1-3[Fuca1-2]Galb1-3GlcNAcb-Sp | Sp | BSA | 5 |
| Blood Group A | A tetra type 1-Sp - 15 | GalNAca1-3[Fuca1-2]Galb1-3GlcNAcb-Sp | Sp | BSA | 15 |
| Blood Group A | A tetra type 2-Sp - 05 | GalNAca1-3[Fuca1-2]Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| Blood Group A | A tetra type 2-Sp - 07 | GalNAca1-3[Fuca1-2]Galb1-4GlcNAcb-Sp | Sp | BSA | 7 |
| Blood Group A | A tetra type 2-Sp - 17 | GalNAca1-3[Fuca1-2]Galb1-4GlcNAcb-Sp | Sp | BSA | 17 |
| peptide-Tn | Ac-A-Tn(Thr)-S-G - 05 | Ac-Ala-(GalNAca)Thr-Ser-Gly-Hex (muc4) | hex | BSA | 5 |
| peptide-Tn | Ac-A-Tn(Thr)-S-G - 08 | Ac-Ala-(GalNAca)Thr-Ser-Gly-Hex (muc4) | hex | BSA | 8 |
| peptide-Tn | Ac-A-Tn(Thr)-S-G - 23 | Ac-Ala-(GalNAca)Thr-Ser-Gly-Hex (muc4) | hex | BSA | 23 |
| peptide-Tn | Ac-G-V-Tn(Thr)-S-A-G - 04 | Ac-Gly-Val-(GalNAca)Thr-Ser-Ala-Gly-Hex (muc1) | hex | BSA | 4 |
| peptide-Tn | Ac-G-V-Tn(Thr)-S-A-G - 21 | Ac-Gly-Val-(GalNAca)Thr-Ser-Ala-Gly-Hex (muc1) | hex | BSA | 21 |
| peptide-Tn | Ac-P-Tn(Thr)-T-G - 05 | Ac-Pro-(GalNAca)Thr-Thr-Gly-Hex (muc2) | hex | BSA | 5 |
| peptide-Tn | Ac-P-Tn(Thr)-T-G - 08 | Ac-Pro-(GalNAca)Thr-Thr-Gly-Hex (muc2) | hex | BSA | 8 |
| peptide-Tn | Ac-P-Tn(Thr)-T-G - 22 | Ac-Pro-(GalNAca)Thr-Thr-Gly-Hex (muc2) | hex | BSA | 22 |
| peptide-GlcNAca | Ac-S-Ser(GlcNAca)-S-G - 07 | AcSer-(GlcNAca)Ser-Ser-Gly-Hex-BSA | hex | BSA | 7 |
| peptide-GlcNAca | Ac-S-Ser(GlcNAca)-S-G - 24 | AcSer-(GlcNAca)Ser-Ser-Gly-Hex-BSA | hex | BSA | 24 |
| peptide-GlcNAcb | Ac-S-Ser(GlcNAcB)-S-G - 07 | AcSer-(GlcNAcb)Ser-Ser-Gly-Hex-BSA | hex | BSA | 7 |
| peptide-GlcNAcb | Ac-S-Ser(GlcNAcB)-S-G - 24 | AcSer-(GlcNAcb)Ser-Ser-Gly-Hex-BSA | hex | BSA | 24 |
| peptide | Ac-S-S-S-G | SerSerSerGly-BSA | hex | BSA | 24 |
| peptide-TF | Ac-S-TF(Ser)-S-G - 04 | AcSer-(Galb1-3GalNAca)Ser-Ser-Gly-Hex-BSA (S-TF-S) | hex | BSA | 4 |
| peptide-TF | Ac-S-TF(Ser)-S-G - 16 | AcSer-(Galb1-3GalNAca)Ser-Ser-Gly-Hex-BSA (S-TF-S) | hex | BSA | 16 |
| peptide-TF | Ac-S-TF(Ser)-S-G - 28 | AcSer-(Galb1-3GalNAca)Ser-Ser-Gly-Hex-BSA (S-TF-S) | hex | BSA | 28 |
| peptide | Ac-S-Thr-S-G - 18 | Ac-Ser-Thr-Ser-Gly-Hex  | hex | BSA | 18 |
| peptide-Tn | Ac-S-Tn(Ser)-S-G - 04 | AcSer-(GalNAca)Ser-Ser-Gly-Hex-BSA (STnS) | hex | BSA | 4 |
| peptide-Tn | Ac-S-Tn(Ser)-S-G - 22 | AcSer-(GalNAca)Ser-Ser-Gly-Hex-BSA (STnS) | hex | BSA | 22 |
| peptide-Tn | Ac-S-Tn(Ser)-S-G - 33 | AcSer-(GalNAca)Ser-Ser-Gly-Hex-BSA (STnS) | hex | BSA | 33 |
| peptide-Tn | Ac-S-Tn(Thr)-A-G - 04 | Ac-Ser-(GalNAca)Thr-Ala-Gly-Hex (muc1) | hex | BSA | 4 |
| peptide-Tn | Ac-S-Tn(Thr)-A-G - 08 | Ac-Ser-(GalNAca)Thr-Ala-Gly-Hex (muc1) | hex | BSA | 8 |
| peptide-Tn | Ac-S-Tn(Thr)-A-G - 22 | Ac-Ser-(GalNAca)Thr-Ala-Gly-Hex (muc1) | hex | BSA | 22 |
| peptide-Tn | Ac-S-Tn(Thr)-G-G - 03 | Ac-Ser-(GalNAca)Thr-Gly-Gly-Hex (muc4) | hex | BSA | 3 |
| peptide-Tn | Ac-S-Tn(Thr)-G-G - 07 | Ac-Ser-(GalNAca)Thr-Gly-Gly-Hex (muc4) | hex | BSA | 7 |
| peptide-Tn | Ac-S-Tn(Thr)-G-G - 19 | Ac-Ser-(GalNAca)Thr-Gly-Gly-Hex (muc4) | hex | BSA | 19 |
| peptide-Tn | Ac-S-Tn(Thr)-S-G - 04 | AcSer-(GalNAca)Thr-Ser-Gly-Hex-BSA (STnS) | hex | BSA | 4 |
| peptide-Tn | Ac-S-Tn(Thr)-S-G - 24 | AcSer-(GalNAca)Thr-Ser-Gly-Hex-BSA (STnS) | hex | BSA | 24 |
| peptide-Tn | Ac-S-Tn(Thr)-S-G HSA-04 | AcSer-(GalNAca)Thr-Ser-Gly-Hex-HSA (STnS) | hex | HSA | 4 |
| peptide-Tn | Ac-S-Tn(Thr)-S-G HSA-23 | AcSer-(GalNAca)Thr-Ser-Gly-Hex-HSA (STnS) | hex | HSA | 23 |
| peptide-Tn | Ac-S-Tn(Thr)-Tn(Thr)-G - 05 | Ac-Ser-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 5 |
| peptide-Tn | Ac-S-Tn(Thr)-Tn(Thr)-G - 09 | Ac-Ser-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 9 |
| peptide-Tn | Ac-S-Tn(Thr)-Tn(Thr)-G - 22 | Ac-Ser-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 22 |
| peptide-Tn | Ac-S-Tn(Thr)-V-G - 04 | Ac-Ser-(GalNAca)Thr-Val-Gly-Hex  | hex | BSA | 4 |
| peptide-Tn | Ac-S-Tn(Thr)-V-G - 22 | Ac-Ser-(GalNAca)Thr-Val-Gly-Hex  | hex | BSA | 22 |
| peptide-TF | Ac-TF(Ser)-G - 04 | Ac(Galb1-3GalNAca)Ser-Gly-Hex-BSA | hex | BSA | 4 |
| peptide-TF | Ac-TF(Ser)-G - 24 | Ac(Galb1-3GalNAca)Ser-Gly-Hex-BSA | hex | BSA | 24 |
| peptide-Tn | Ac-Tn(Ser)Tn(Ser)Tn(Ser)-G - 03 | Ac(GalNAca)Ser-(GalNAca)Ser-(GalNAca)Ser-Gly-Hex-BSA (Tn3) | hex | BSA | 3 |
| peptide-Tn | Ac-Tn(Ser)-Tn(Ser)-Tn(Ser)-G - 16 | Ac(GalNAca)Ser-(GalNAca)Ser-(GalNAca)Ser-Gly-Hex-BSA (Tn3) | hex | BSA | 16 |
| peptide-Tn | Ac-Tn(Ser)Tn(Ser)Tn(Ser)-G - 27 | Ac(GalNAca)Ser-(GalNAca)Ser-(GalNAca)Ser-Gly-Hex-BSA (Tn3) | hex | BSA | 27 |
| peptide-Tn | Ac-Tn(Thr)-G - 21 | Ac(GalNAca)Thr-Gly-Hex-BSA | hex | BSA | 21 |
| peptide-Tn | Ac-Tn(Thr)-Tn(Thr)-Tn(Thr)-G - 05 | Ac-(GalNAca)Thr-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 5 |
| peptide-Tn | Ac-Tn(Thr)-Tn(Thr)-Tn(Thr)-G - 08 | Ac-(GalNAca)Thr-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 8 |
| peptide-Tn | Ac-Tn(Thr)-Tn(Thr)-Tn(Thr)-G - 20 | Ac-(GalNAca)Thr-(GalNAca)Thr-(GalNAca)Thr-Gly-Hex (muc2) | hex | BSA | 20 |
| peptide-Tn | Ac-T-Tn(Thr)-P-G - 04 | Ac-Thr-(GalNAca)Thr-Pro-Gly-Hex (muc2,6,7) | hex | BSA | 4 |
| peptide-Tn | Ac-T-Tn(Thr)-P-G - 08 | Ac-Thr-(GalNAca)Thr-Pro-Gly-Hex (muc2,6,7) | hex | BSA | 8 |
| peptide-Tn | Ac-T-Tn(Thr)-P-G - 21 | Ac-Thr-(GalNAca)Thr-Pro-Gly-Hex (muc2,6,7) | hex | BSA | 21 |
| peptide-Tn | Ac-V-Tn(Thr)-S-G - 04 | Ac-Val-(GalNAca)Thr-Ser-Gly-Hex (muc1) | hex | BSA | 4 |
| peptide-Tn | Ac-V-Tn(Thr)-S-G - 08 | Ac-Val-(GalNAca)Thr-Ser-Gly-Hex (muc1) | hex | BSA | 8 |
| peptide-Tn | Ac-V-Tn(Thr)-S-G - 19 | Ac-Val-(GalNAca)Thr-Ser-Gly-Hex (muc1) | hex | BSA | 19 |
| Blood Group A | Adi - 04 | GalNAca1-3Galb-BSA (Adi) | MEAG | BSA | 4 |
| Blood Group A | Adi - 17 | GalNAca1-3Galb-BSA (Adi) | MEAG | BSA | 17 |
| glycoprotein | AGE60 | Advanced glycation endproducts day 60 (AGE60) | na | BSA | na |
| Blood Group A | A-LeB hexa | GalNAca1-3(Fuca1-2)Galb1-3(Fuca1-4)GlcNAcb1-3Galb1- | (Glc) | BSA | 6 |
| glycoprotein | Alpha-1-acid glycoprotein | alpha1 Acid Glycoprotein | na |   | na |
| glycoprotein | Alpha-fetoprotein | alpha fetoprotein (AFP) | na |   | na |
| non-human-aGal | alphaGal | Gala1-3Galb1-4GlcNAc-BSA (alphaGal) | 14 atom spacer  | BSA | 8 |
| non-human | alpha-Gal tetra - 04 | Gala1-3Galb1-4GlcNAcb1-3Galb1- | (Glc) | BSA | 4 |
| non-human | alpha-Gal tetra - 17 | Gala1-3Galb1-4GlcNAcb1-3Galb1- | (Glc) | BSA | 17 |
| non-human-aGal | alphaGal-6-deoxy | Gala1-3Galb1-4(6deoxy-GlcNAc)-HSA (alphaGal) | 3 atom spacer  | HSA | 11 |
| non-human | Ara5 | Araa1-5Araa1-5Araa1-5Araa1-5Araa1-BSA (Ara5) | (Ara) | BSA | 20 |
| Blood Group B | B tetra type 1-Sp - 04 | Gala1-3[Fuca1-2]Galb1-3GlcNAcb-Sp | Sp | BSA | 4 |
| Blood Group B | B tetra type 1-Sp - 16 | Gala1-3[Fuca1-2]Galb1-3GlcNAcb-Sp | Sp | BSA | 16 |
| Blood Group B | B tetra type 2-Sp - 05 | Gala1-3[Fuca1-2]Galb1-3GlcNAcb-Sp | Sp | BSA | 5 |
| Blood Group B | B tetra type 2-Sp - 07 | Gala1-3[Fuca1-2]Galb1-4GlcNAcb-Sp | Sp | BSA | 7 |
| Blood Group B | B tetra type 2-Sp - 20 | Gala1-3[Fuca1-2]Galb1-4GlcNAcb-Sp | Sp | BSA | 20 |
| non-human | B6 di - 06 | Gala1-3Galb- BSA (Bdi) | (Glc) | BSA | 6 |
| non-human | B6 di - 16 | Gala1-3Galb- BSA (Bdi) | (Glc) | BSA | 16 |
| non-human | Bdi | Gala1-3Gal- BSA (Bdi) | 14 atom spacer  | BSA | 23 |
| Blood Group A | BG-A | GalNAca1-3(Fuca1-2)Galb•Û\_ -BSA [BG-A] | 6 atom spacer | BSA | 19 |
| Blood Group A | BG-A1 | GalNAca1-3(Fuca1-2)Galb1-3GlcNAcb1-3Galb1-4(Glc)-APD-HSA (BG-A1) | APD | HSA | 5 |
| Blood Group B | BG-B (Dextra) | Gala1-3(Fuca1-2)Galb-BSA [BG-B] from Dextra | 6 atom spacer | BSA | 13 |
| Blood Group H | BG-H1 | Fuca1-2Galb1-3GlcNAcb1-3Galb1-4Glcb-APD-HSA [BG-H1]  | APD- | HSA | 20 |
| Blood Group H | BG-H2 | Fuca1-2Galb1-4GlcNAcb-HSA (BG-H2) | unknown | HSA | 16 |
| control | BSA | Bovine serum albumin | na | BSA | na |
| control | BSA - C5 (Alkyne) - 10 | DF-168B-175-1 | C5 | BSA |   |
| control | BSA - C5 (Alkyne) - 23 | DF-168C-16-B5 | C5 | BSA |   |
| control | BSA-#2 |   | na |   | na |
| control | Triazole linker from Xuefei | BSA-linker-triazole from Xuefei | adipic acid | BSA | 43 |
| glycoprotein | BSM | Bovine submaxillary mucin (STn, STF, S-GlcNAcb1-3, ~20% of Sia is acetylated at 7,8, or 9) | na | BSM | na |
| glycoprotein | BSM (asialo) | Asialo-Bovine submaxillary mucin (aBSM, Tn, TF, GlcNAcb1-3GalNAc) | na | BSM | na |
| glycoprotein | BSM (deacetylated) | Deacetylated-Bovine submaxillary mucin | na | BSM | na |
| glycoprotein | BSM (ox) | periodate oxidized bovine submaxillary mucin | na |   | na |
| glycoprotein | CEA | carcinoembryonic antigen (CEA) | na |   | na |
| non-human | Cellobiose | Glcb1-4Glcb-BSA (Cellobiose) | (Glc) | BSA | 13 |
| non-human | Cellotriose | Glcb1-4Glcb1-4Glcb-BSA (Cello3)  | (Glc) | BSA | 13 |
| non-human | Chito 3 | GlcNAcb1-4GlcNAcb1-4GlcNAcb-BSA (Chito 3) | (GlcNAc) | BSA | 8 |
| non-human | Chito 3 - 20 | GlcNAcb1-4GlcNAcb1-4GlcNAcb-BSA (Chito 3) | (GlcNAc) | BSA | 20 |
| carb-Sia | CT/Sda-Sp - 05 | Neu5Aca2-3[GalNAcb1-4]Galb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-Sia | CT/Sda-Sp - 13 | Neu5Aca2-3[GalNAcb1-4]Galb1-4GlcNAcb-Sp | Sp | BSA | 13 |
| control | Cy3 | Cy3-BSA (20mg/mL + BSA, 125mg/mL total) | na | BSA |   |
| control | Cy5 | Cy5-BSA (30mg/mL+ BSA, 125mg/mL total) | na | BSA |   |
| Lewis | DFLNH(c) | Galb1-4GlcNAcb1-6[Fuca1-2Galb1-3(Fuca1-4)GlcNAcb1-3]Galb1-BSA | (Glc) | BSA | 8 |
| Lewis | DFLNnH | Galb1-4(Fuca1-3)GlcNAcb1-6[Galb1-4(Fuca1-3)GlcNAcb1-3]Galb1-BSA | (Glc) | BSA | 10 |
| Lewis | DFpLNH I | Fuca1-2Galb1-3(Fuca1-4)GlcNAcb1-3Galb1-4GlcNAcb1-3Galb-BSA | (Glc) | BSA | 9 |
| carb-type 2 | Di-LacNAc-Sp - 06 | (Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 6 |
| carb-type 2 | Di-LacNAc-Sp - 16 | (Galb1-4GlcNAcb1-3)2b-Sp | Sp | BSA | 16 |
| Lewis | Di-LeC-Sp - 06 | Galb1-3GlcNAcb1-3Galb1-3GlcNAcb-Sp | Sp | BSA | 6 |
| Lewis | Di-LeC-Sp - 16 | Galb1-3GlcNAcb1-3Galb1-3GlcNAcb-Sp | Sp | BSA | 16 |
| carb-Sia | DSLNT | Siaa2-3Galb1-3(Siaa2-6)GlcNAcb1-3Galb1-BSA (DSLNT) | (Glc) | BSA | 5.6 |
| glycoprotein | FABP | Fatty Acid Binding Protein (FABP) | na |   | na |
| glycoprotein | fetuin | fetuin (Sia2-3LacNAc, Sia2-6LacNAc, SiaLeC, STF) | na |   | na |
| glycoprotein | fetuin (asialo) | asialofetuin (Galb1-4GlcNAc, Galb1-3GlcNAc, Galb1-3GalNAc |   |   |   |
| glycoprotein | Fetuin (ox) | periodate oxidized fetuin | na |   | na |
| non-human | Forssman Di - 04 | GalNAca1-3GalNAcb1-BSA | MEAG | BSA | 4 |
| non-human | Forssman Di - 21 | GalNAca1-3GalNAcb1-BSA | MEAG | BSA | 21 |
| non-human | Forssman Di - 31 | GalNAca1-3GalNAcb1-BSA | MEAG | BSA | 31 |
| non-human | Forssman Tetra-BSA - 05 | GalNAca1-3GalNAcb1-3Gala1-4Galb-BSA | (Glc) | BSA | 5 |
| non-human | Forssman Tetra-BSA - 13 | GalNAca1-3GalNAcb1-3Gala1-4Galb-BSA | (Glc) | BSA | 13 |
| Lewis | Fuc, Sia-LNnH-APD-HSA | Galb1-4[Fuca1-3]GlcNAcb1-6[Neu5Aca2-3Galb1-4GlcNAcb1-3]Galb1-APD-HSA | APD | HSA | 12 to 15 |
| carb-Fuc | Fuc-a - 04 | Fuc-a - BSA | MEAG | BSA | 4 |
| carb-Fuc | Fuc-a - 22 | Fuc-a - BSA | MEAG | BSA | 22 |
| non-human | Fuc-b - 04 | Fuc-b - BSA | MEAG | BSA | 4 |
| non-human | Fuc-b - 22 | Fuc-b - BSA | MEAG | BSA | 22 |
| glycolipid | Fuc-GM1a - 08 | Fuca1-2Galb1-3GalNAcb1-4(Siaa2-3)Galb1-4 | (Glc) | BSA | 8 |
| non-human | G2M4 | Manb1-4(Gala1-6)Manb1-4(Gala1-6)Manb1-4Manb1-BSA (G2M4) | (man) | BSA | 7 |
| glycolipid | GA1 - 06 | Galb1-3GalNAcb1-4Galb1-BSA (GA1tri or asialo-GM1) | (Glc) |   | 6 |
| glycolipid | GA1 - 20 | Galb1-3GalNAcb1-4Galb1-BSA (GA1tri or asialo-GM1) | (Glc) | BSA | 20 |
| glycolipid | GA1di | Galb1-3GalNAcb ‰ÛÒ HSA (GA1di) | 3 atom spacer) | HSA | 11 |
| glycolipid | GA2di - 04 | GalNAcb1-4Galb - BSA (GA2di or asialo-GM2) | MEAG | BSA | 4 |
| glycolipid | GA2di - 16 | GalNAcb1-4Galb - BSA (GA2di or asialo-GM2) | MEAG | BSA | 16 |
| glycolipid | GA2di - 37 | GalNAcb1-4Galb - BSA (GA2di or asialo-GM2 | MEAG | BSA | 37 |
| glycolipid | GA2di (accurate) | GalNAcb1-4Galb - BSA (GA2di or asialo-GM2) | unknown | BSA | 28 |
| non-human-aGal | Gal3 | Gala1-3Galb1-4Gala-BSA (Gal3) | (1-3Gal) | BSA | 7 |
| carb-Gal | Gal-a | Gal-a - BSA | MEAG | BSA | 24 |
| non-human | Gala1-2Gal | Gala1-2Gal | 3 atom | BSA | 13 |
| carb-Gal | Gala1-4Galb | Gala1-4Galb-CETE-BSA | CETE | BSA | 11 |
| non-human-aGal | Gala3-type1 | Gala1-3Galb1-3GlcNAc-BSA | 3 atom | BSA | 9 |
| carb-Gal | Gal-b | Gal-b - BSA | MEAG | BSA | 21 |
| non-human | Galb1-4Gal | Galb1-4Gal-BSA | 3 atom spacer  | BSA |   |
| non-human | Galb1-6Man-a | Galb1-6Man-a - BSA | MEAG | BSA | 13 |
| non-human-aGal | Galilli | Gala1-3Galb1-4Glc-BSA  | 3 atom | BSA | 21 |
| carb-GalNAc | GalNAc-a - 04 | GalNAc-a - BSA | MEAG |   | 4 |
| carb-GalNAc | GalNAc-a - 22 | GalNAc-a - BSA | MEAG | BSA | 22 |
| carb-GalNAc | GalNAca1-6Galb - 04 | GalNAca1-6Galb-BSA | MEAG |   | 4 |
| carb-GalNAc | GalNAca1-6Galb - 22 | GalNAca1-6Galb-BSA | MEAG | BSA | 22 |
| carb-GalNAc | GalNAc-b | GalNAc-b - BSA | MEAG | BSA | 21 |
| glycolipid | Gb4 | GalNAcb1-3Gala1-4Galb1-BSA (Gb4 or P antigen) | (Glc) | BSA | 9 |
| glycolipid | Gb4 tetra (P1 tetra)-Sp - 06 | GalNAcb1-3Gala1-4Galb1-4GlcNAcb-Sp | Sp | BSA | 6 |
| glycolipid | Gb4 tetra (P1 tetra)-Sp - 15 | GalNAcb1-3Gala1-4Galb1-4GlcNAcb-Sp | Sp | BSA | 15 |
| glycolipid | Gb5/SSEA3 - 04 | Galb1-3GalNAcb1-3Gala1-4Galb1- | (Glc) | BSA | 4 |
| glycolipid | Gb5/SSEA3 - 12 | Galb1-3GalNAcb1-3Gala1-4Galb1- | (Glc) | BSA | 12 |
| glycolipid | GD1a-Sp - 05 | Neu5Aca2-3[Neu5Aca2-3Galb1-3GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 5 |
| glycolipid | GD1a-Sp - 10 | Neu5Aca2-3[Neu5Aca2-3Galb1-3GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 10 |
| glycolipid | GD1b | Siaa2-8Siaa2-3(Galb1-3GalNAcb1-4)Galb1-4-BSA | (Glc) | BSA | 5 |
| glycolipid | GD2-Sp - 04 | Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 4 |
| glycolipid | GD2-Sp - 10 | Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 10 |
| glycolipid | GD3-Sp - 04 | Neu5Aca2-8Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 4 |
| glycolipid | GD3-Sp - 08 | Neu5Aca2-8Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 8 |
| carb-Glc | Glc-a | Glc-a - BSA | MEAG | BSA | 22 |
| carb-Glc | Glc-a - 05 | Glc-a - BSA | MEAG | BSA | 5 |
| carb-Glc | Glca1-6Glca1-4Glca1-4Glcb | Glca1-6Glca1-4Glca1-4Glcb-CETE-BSA | CETE | BSA | 15 |
| carb-Glc | Glc-b | Glc-b - BSA | MEAG | BSA | 23 |
| carb-GlcNAc | GlcNAca1-4Galb - 03 | GlcNAca1-4Galb-BSA | MEAG | BSA | 3 |
| carb-GlcNAc | GlcNAca1-4Galb - 20 | GlcNAca1-4Galb-BSA | MEAG | BSA | 20 |
| carb-GlcNAc | GlcNAc-b | GlcNAc-b - BSA | MEAG | BSA | 21 |
| N-linked | GlcNAc-Man3 | Mana1-6(GlcNAcb1-2Mana1-3)Manb1-4GlcNAcb-BSA  | (GlcNAc) | BSA | 2 |
| N-linked | GlcNAc-Man5 | Mana1-6(Mana1-3)Mana1-6(GlcNAcb1-2Mana1-3)Manb1-4GlcNAcb-BSA  | (GlcNAc) | BSA | 3 |
| Blood Group A | Globo A | GalNAca1-3(Fuca1-2)Galb1-3GalNAcb1-3Gala1-4Galb1-BSA | (Glc) | BSA | 9 |
| Blood Group H | Globo H | Fuca1-2Galb1-3GalNAcb1-3Gala1-4Galb1-BSA | (Glc) | BSA | 10 |
| glycoprotein | glycophorin (asialo) | asialo-glycophorin A (aGn) | na | Gn | na |
| glycoprotein | Glycophorin A | Glycophorin A (Gn) | na | Gn | na |
| glycolipid | GM1a | Galb1-3GalNAcb1-4(Siaa2-3)Galb1-4(Glc)HSA  | (Glc) | HSA | 29 |
| glycolipid | GM2-Sp - 04 | Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 4 |
| glycolipid | GM2-Sp - 07 | Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 7 |
| glycolipid | GM2-Sp - 14 | Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 14 |
| glycolipid | GM3 | Sialyla2-3Galb1-4Glc-APD-HSA  | APD | HSA | 15-Dec |
| glycolipid | GM3(Gc)-Sp - 05 | Neu5Gca2-3Galb1-4Glcb-Sp | Sp | BSA | 5 |
| glycolipid | GM3(Gc)-Sp - 14 | Neu5Gca2-3Galb1-4Glcb-Sp | Sp | BSA | 14 |
| glycolipid | GM3-Sp - 04 | Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 4 |
| glycolipid | GM3-Sp - 11 | Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 11 |
| carb-GlcNAc | GNLacNAc-Sp - 06 | GlcNAcb1-3Galb1-4GlcNAcb-Sp | Sp | BSA | 6 |
| carb-GlcNAc | GNLacNAc-Sp - 16 | GlcNAcb1-3Galb1-4GlcNAcb-Sp | Sp | BSA | 16 |
| glycolipid | GQ2-Sp - 03 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 3 |
| glycolipid | GQ2-Sp - 06 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 6 |
| glycolipid | GT2-Sp - 03 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 3 |
| glycolipid | GT2-Sp - 08 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3[GalNAcb1-4]Galb1-4Glcb-Sp | Sp | BSA | 8 |
| glycolipid | GT3-Sp - 03 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 3 |
| glycolipid | GT3-Sp - 07 | Neu5Aca2-8Neu5Aca2-8Neu5Aca2-3Galb1-4Glcb-Sp | Sp | BSA | 7 |
| GAG | Hep-5000 | heparin polysaccharide (MW ~5000) | na | BSA | 1 |
| GAG | Hep-N-acetylated | fully N-acetylated heparin polysaccharide | na | BSA | 1 |
| control | HSA | Human serum albumin (isolated from serum) | na | HSA | na |
| control | HSA (recomb) | human serum albumin (recombinant) | na | HSA | na |
| glycoprotein | hsp90 | Heat Shock Protein 90 (hsp90) | na |   | na |
| GAG | Hya8 | (GlcNAcb1-4GlcAb1-3)4b1- | (GlcNAc) | BSA | 3 |
| GAG | Hya9 | (GlcAb1-3GlcNAcb1-4)4b1-3GlcAb1- | (GlcNAc) | BSA | 3 |
| N-linked | Hybrid-M5N4B | GlcNAcb1-2Mana1-3[Mana1-3(Mana1-6)Mana1-6](GlcNAcb1-4)Manb1-4GlcNAcb1- | (GlcNAc) | BSA | 3 |
| carb-type 1 | iLNO | Galb1-3GlcNAcb1-3Galb1-4GlcNAcb1-6 (Galb1-3GlcNAcb1-3)Galb1- | (Glc) | BSA | 6 |
| carb-Glc | Isomaltose | Glca1-6Glcb-BSA | MEAG | BSA | 13 |
| glycoprotein | KLH | Keyhole limpet hemocyanin | na | KLH | na |
| glycoprotein | KLH (oxidized) | periodate oxidized Keyhole limpet hemocyanin | na | KLH | na |
| carb-type 2 | LacNAc | Galb1-4GlcNAc - BSA (LacNAc) | 14 atom spacer  | BSA | 22 |
| carb-type 2 | LacNAc (trimeric) | Galb1-4GlcNAcb1-3Galb1-4GlcNAcb1-3Galb1-4GlcNAcb-APE-HSA (TriLacNAc) | APE | HSA | 8 |
| N-linked | LacNAc-Man5 | Mana1-6(Mana1-3)Mana1-6(Galb1-4GlcNAcb1-2Mana1-3)Manb1-4GlcNAcb-BSA  | (GlcNAc) | BSA | 2 |
| carb-type 2 | LacNAc-Sp - 06 | Galb1-4GlcNAcb-Sp | Sp | BSA | 6 |
| carb-type 2 | LacNAc-Sp - 15 | Galb1-4GlcNAcb-Sp | Sp | BSA | 15 |
| carb-Gal | Lactose | Galb1-4Glcb - BSA (Lac) | unknown | BSA | 33 |
| carb-Gal | Lactose-C5 - 05 | Galb1-4Glcb - BSA (Lac) | C5 | BSA | 5 |
| carb-Gal | Lactose-C5 - 14 | Galb1-4Glcb - BSA (Lac) | C5 | BSA | 14 |
| carb-GalNAc | LDN-Sp - 05 | GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 5 |
| carb-GalNAc | LDN-Sp - 14 | GalNAcb1-4GlcNAcb-Sp | Sp | BSA | 14 |
| Lewis | LeA | Galb1-3[Fuca1-4)GlcNAcb1-3Galb1-4Glcb- BSA (Lea ) | 3 atom spacer | BSA | 18 |
| Lewis | LeA-LeX | Galb1-3(Fuca1-4)GlcNAcb1-3Galb1-4(Fuca1-3)GlcNAcb1-3Galb1-APD-HSA | APD | HSA | 21 |
| Lewis | LeB | Fuca1-2Galb1-3[Fuca1-4)GlcNAcb1-3Galb1-4Glcb-BSA (Leb ) | 3 atom spacer | BSA | 9 |
| Lewis | LeC-Sp - 06 | Galb1-3GlcNAcb-Sp | Sp | BSA | 6 |
| Lewis | LeC-Sp - 07 | Galb1-3GlcNAcb-Sp | Sp | BSA | 7 |
| Lewis | LeC-Sp - 15 | Galb1-3GlcNAcb-Sp | Sp | BSA | 15 |
| Lewis | LeX (dimeric) | Galb1-4[Fuca1-3)GlcNAcb1-3Galb1-4(Fuca1-3)GlcNAcb1-3Galb1-APE-BSA  | APE | BSA | 7 |
| Lewis | LeX (monomeric) | Galb1-4[Fuca1-3)GlcNAc-APD-HSA (Lex)  | APD | HSA | x |
| Lewis | LeY | Fuca1-2Galb1-4[Fuca1-3)GlcNAc ‰ÛÒHSA (Ley) | unknown | HSA | 8 |
| carb-type 1+2 | LNH - 13 | Galb1-4GlcNAcb1-6(Galb1-3GlcNAcb1-3)Galb1-BSA | (Glc) | BSA | 13 |
| carb-type 2 | LNnH - 11 | Galb1-4GlcNAcb1-6(Galb1-4GlcNAcb1-3)Galb1-BSA | (Glc) | BSA | 11 |
| carb-type 2 | LNnT - 04 | Galb1-4GlcNAcb1-3Galb1-BSA (LNnT) | (Glc) | BSA | 4 |
| carb-type 2 | LNnT - 14 | Galb1-4GlcNAcb1-3Galb1-BSA (LNnT) | (Glc) | BSA | 14 |
| carb-type 1 | LNT - 05 | Galb1-3GlcNAcb1-3Galb-BSA (LNT) | (Glc) | BSA | 5 |
| carb-type 1 | LNT - 21 | Galb1-3GlcNAcb1-3Galb-BSA (LNT) | (Glc) | BSA | 21 |
| carb-GlcNAc | LNT-2-Sp - 06 | GlcNAcb1-3Galb1-4Glcb-Sp | Sp | BSA | 6 |
| carb-GlcNAc | LNT-2-Sp - 15 | GlcNAcb1-3Galb1-4Glcb-Sp | Sp | BSA | 15 |
| carb-type 1 | LNT-Sp - 06 | Galb1-3GlcNAcb1-3Galb1-4GlcNAcb-Sp | Sp | BSA | 6 |
| carb-type 1 | LNT-Sp - 15 | Galb1-3GlcNAcb1-3Galb1-4GlcNAcb-Sp | Sp | BSA | 15 |
| carb-Sia | LSTa | Siaa2-3Galb1-3GlcNAcb1-3Galb1-BSA (LSTa) | (Glc) | BSA | 10 |
| carb-Sia | LSTb | Galb1-3(Siaa2-6)GlcNAcb1-3Galb1-BSA (LSTb) | (Glc) | BSA | 11 |
| carb-Sia | LSTc | Siaa2-6Galb1-3GlcNAcb1-3Galb1-BSA (LSTc) | (Glc) | BSA | 7 |
| carb-Glc | Maltopentaose | Glca1-4Glca1-4Glca1-4Glca1-4Glca-BSA (Malto5) | (Glc) | BSA | 11 |
| carb-Glc | Maltose | Glca1-4Glcb-BSA (Maltose) | MEAG | BSA | 23 |
| N-linked | Man1 - 04 | Manβ1-4GlcNAcβ1-4GlcNAcβ1- | 4HB | BSA | 4 |
| N-linked | Man1 - 12 | Manβ1-4GlcNAcβ1-4GlcNAcβ1- | 4HB | BSA | 12 |
| N-linked | Man3 | Manα1-6(Manα1-3)Manβ1-4GlcNAc -BSA (Man3) | (GlcNAc) | BSA | 5 |
| N-linked | Man5 | Manα1-6(Manα1-3)Manα1-6(Manα1-3)Manβ1-4GlcNAc-BSA (Man5) | (GlcNAc) | BSA | 5 |
| N-linked | Man6 - I | Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-3)Manβ1-BSA  | (GlcNAc) | BSA | 4 |
| N-linked | Man6 - II | Manα1-2Manα1-3Manα1-6(Manα1-2Manα1-3)Manβ1-BSA (Man6 - II) | (GlcNAc) | BSA | 5 |
| N-linked | Man7D1 | Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-2Manα1-3)Manβ1-4GlcNAc-BSA | (GlcNAc) | BSA | 10 |
| N-linked | Man7D3 | Manα1-2Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-3)Manβ1-4GlcNAc-BSA | (GlcNAc) | BSA | 8 |
| N-linked | Man8D1D3 | Manα1-2Manα1-6(Manα1-3)Manα1-6(Manα1-2Manα1-2Manα1-3)Manβ1-4GlcNAc-BSA | (GlcNAc) | BSA | 9 |
| N-linked | Man9 | Manα1-2Manα1-6(Manα1-2Manα1-3)Manα1-6(Manα1-2Manα1-2Manα1-3)Manβ1-4GlcNAc-BSA  | (GlcNAc) | BSA | 5 |
| carb-Man | Man-a | Man-α - BSA | MEAG | BSA | 20 |
| carb-Man | Man-a - 05 | Man-α - BSA | MEAG | BSA | 5 |
| carb-Man | Mana1-6Man-a | Manα1-6Man-α - BSA | MEAG | BSA | 15 |
| carb-Man | Mana1-6Man-a - 04 | Manα1-6Man-α- BSA | MEAG | BSA | 4 |
| non-human | Manb4 - 04 | Manβ1-4Manβ1-4Manβ1-4Manβ1-BSA (Manb4) | (Man) | BSA | 14 |
| non-human | Manb4 |   |   |   |   |
| carb-Man | ManT | Manα1-6[Manα1-3]Manβ-BSA [ManT] | 14 atom spacer  | BSA | 26 |
| carb-type 1 | MFiLNO(1-3) | Galb1-3GlcNAcb1-3Galb1-4(Fuca1-3)GlcNAcb1-6 (Galb1-3GlcNAcb1-3)Galb1- | (Glc) | BSA | 9 |
| Lewis | MFLNH I | Galb1-4GlcNAcb1-6 (Fuca1-2Galb1-3GlcNAcb1-3)Galb1- | (Glc) | BSA | 11 |
| Lewis | MFLNH III | Galb1-4(Fuca1-3)GlcNAcb1-6 (Galb1-3GlcNAcb1-3)Galb1- | (Glc) | BSA | 14 |
| Lewis | MSMFLNH I | Siaa2-6Galb1-4GlcNAcb1-6 (Fuca1-2Galb1-3GlcNAcb1-3)Galb1- | (Glc) | BSA | 11 |
| Lewis | MSMFLnNH | Galb1-4(Fuca1-3)GlcNAcb1-6 (Siaa1-3Galb1-4GlcNAcb1-3)Galb1- | (Glc) | BSA | 9 |
| N-linked | NA2 | Galb1-4GlcNAcb1-2Mana1-6[Galb1-4GlcNAcb1-2Mana1-3]Manb1-4GlcNAc -BSA (NA2) | (GlcNAc) | BSA | 8 |
| N-linked | NA3 | Galb1-4GlcNAcb1-2Mana1-6[Galb1-4GlcNAcb1-2(Galb1-4GlcNAcb1-4)Mana1-3]Manb1-4GlcNAc -BSA (NA3) | (GlcNAc) | BSA | 5 |
| N-linked | NA4 | Galb1-4GlcNAcb1-2(Galb1-4GlcNAcb1-6)Mana1-6[Galb1-4GlcNAcb1-2(Galb1-4GlcNAcb1-4)Mana1-3]Manb1-4GlcNAc -BSA (NA4) | (GlcNAc) | BSA | 5 |
| N-linked | NGA2 | GlcNAcb1-2Mana1-6(GlcNAcb1-2Mana1-3)Manb1-4GlcNAc -BSA (NGA2) | (GlcNAc) | BSA | 7 |
| N-linked | NGA2B | GlcNAcb1-2Mana1-6(GlcNAcb1-2Mana1-3)(GlcNAcb1-4)Manb1-4GlcNAc -BSA (NGA2B) | (GlcNAc) | BSA | 5 |
| N-linked | NGA3 | GlcNAcb1-2Mana1-6[GlcNAcb1-2(GlcNAcb1-4)Mana1-3]Manb1-4GlcNAc -BSA (NGA3) | (GlcNAc) | BSA | 1 |
| N-linked | NGA3B | GlcNAcb1-2Mana1-6[GlcNAcb1-2(GlcNAcb1-4)Mana1-3](GlcNAcb1-4)Manb1-4GlcNAc -BSA (NA3) | (GlcNAc) | BSA | 6 |
| N-linked | NGA4 | GlcNAcb1-2(GlcNAcb1-6)Mana1-6[GlcNAcb1-2(GlcNAcb1-4)Mana1-3]Manb1-4GlcNAc -BSA  | (GlcNAc) | BSA | 6 |
| N-linked | NGA4(B)2 | GlcNAcb1-2(GlcNAcb1-4)(GlcNAcb1-6)Mana1-6[GlcNAcb1-2Mana1-3](GlcNAcb1-4)Manb1-4GlcNAc -BSA [NGA4(B)2] | (GlcNAc) | BSA | 4 |
| N-linked | NGA5B | GlcNAcb1-2(GlcNAcb1-4)(GlcNAcb1-6)Mana1-6[GlcNAcb1-2(GlcNAcb1-4)Mana1-3](GlcNAcb1-4)Manb1-4GlcNAc -BSA (NGA5B) | (GlcNAc) | BSA | 2 |
| glycoprotein | OSM | Ovine submaxillary mucin (94% STn, 4% TF, 2% Fuca1-2Galb1-3GalNAc) | na | OSM | na |
| glycoprotein | OSM (asialo) | asialo-Ovine submaxillary mucin (aOSM) | na | OSM | na |
| glycoprotein | OSM (ox) | periodate oxidized ovine submaxillary mucin | na |   | na |
| glycoprotein | ovalbumin | ovalbumin (56% Man5+Man6) | na |   | na |
| glycoprotein | Ovalbumin (ox) | periodate oxidized ovalbumin | na |   | na |
| glycolipid | P1 | Gala1-4Galb1-4GlcNAc-BSA (P1) |   | BSA | 9 |
| control | PEG-linker | OH-(CH2)2-NH-Gly-CO-PEG7-NH-(CO)Hept-SH-Mal-Cychex-CO-BSA | PEG-linker | BSA | 6 |
| glycolipid | Pk or Gb3 | Gala1-4Galb1-4Glc-HSA [Pk or Gb3 or CD77] |   | HSA | 13 |
| carb-type 1 | pLNH - 07 | Galb1-3GlcNAcb1-3Galb1-4GlcNAcb1-3Galb1-BSA (pLNH) | (Glc) | BSA | 7 |
| carb-type 1 | pLNH - 21 | Galb1-3GlcNAcb1-3Galb1-4GlcNAcb1-3Galb1-BSA (pLNH) | (Glc) | BSA | 21 |
| glycoprotein | PSA | Prostate Specific Antigen (PSA) |   |   |   |
| non-human | Rha-a | Rha-a - BSA | MEAG | BSA | 18 |
| non-human | Rha-b | Rha-b - BSA | MEAG | BSA | 21 |
| peptide-Tn | R-Tn(Ser)-Tn-hydroxyethylamide | BSA-linker-Tn(Ser)-hydroxyethylamide | adipic acid | BSA | 36 |
| Blood Group H | Sia-LNF V | Fuca1-2Galb1-3(Neu5Aca2-6)GlcNAcb1-3Galb1-APD-HSA | APD | HSA | 12 to 15 |
| carb-Sia | Sia-LNnT | Siaa2-3Galb1-4GlcNAcb1-3Galb1-APD-HSA | APD | HSA | 9 |
| Lewis | Sialyl LeA | Siaa2-3Galb1-3[Fuca1-4)GlcNAcb1-3Galb1-APD-HSA (SLeA) | APD | HSA | 12 |
| Lewis | Sialyl LeX | Sialyla2-3Galb1-4[Fuca1-3)GlcNAc - BSA | 14 atom spacer  | BSA | 9 |
| glycolipid | SSEA-4-Sp - 05 | Neu5Aca2-3Galb1-3GalNAcb1-3Gala1-4Galb1-4Glcb-Sp | Sp | BSA | 5 |
| glycolipid | SSEA-4-Sp - 12 | Neu5Aca2-3Galb1-3GalNAcb1-3Gala1-4Galb1-4Glcb-Sp | Sp | BSA | 12 |
| Blood Group H | TFiLNO(1-2,1-2,1-3) | Fuca1-2Galb1-3GlcNAcb1-3Galb1-4(Fuca1-3)GlcNAcb1-6(Fuca1-2Galb1-3GlcNAcb1-3)Galb-BSA | (Glc) | BSA | 4 |
| Blood Group H | TFiLNO(1-2,1-2,1-4) | Fuca1-2Galb1-3GlcNAcb1-3Galb1-4GlcNAcb1-6[Fuca1-2Galb1-3(Fuca1-4)GlcNAcb1-3]Galb-BSA | (Glc) | BSA | 6 |
| glycoprotein | Tgl | Thyroglobulin (Tgl) | na |   | na |
| non-human | X3Glc3 | Xyla1-6Glcb1-4(Xyla1-6)Glcb1-4(Xyla1-6)Glcb1-BSA (X3Glc3) | (Glc) | BSA | 15 |
| non-human | Xylb4 | Xylb1-4Xylb1-4Xylb1-4Xylb1-BSA (Xylb4) | (xyl) | BSA | 22 |
| cancer-associated glycopeptide mucins | DTVPLPTAHG-TF(Thr)-SASSTG |   |   |   |   |
| cancer-associated glycopeptide mucins | DTVPLPTAHG-TF(Thr)-TF(Ser)-ASSTG |   |   |   |   |
| cancer-associated glycopeptide mucins | DTVPLPTAHGTSASSTG |   |   |   |   |
| cancer-associated glycopeptide mucins | DTVPLPTAHGT-TF(Ser)-ASSTG |   |   |   |   |
| cancer-associated glycopeptide mucins | DTVPLP-TF(Thr)-AHGTSASSTG |   |   |   |  |
| glycoprotein | gp120 | gp120 glycoprotein  |  |  |   |

###### Supplementary Table 3: List of glycans that were elevated during HIV infection

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of glycan** | **Glycan Name** | **Glycan Structure** | **Selected based on method** |
| N-linked | Man1 |  | 2 |
| GlcNAc-Man3 |  | 2 |
| Man3 |  | 2 |
| LacNAc-Man5 |  | 2 |
| Man5 |  | 1 |
| Man8 |  | 1 & 2 |
| Man9 |  | 1 |
| NA3 |  | 1 |
| NA4 |  | 2 |
| NGA2B |  | 2 |
| NGA5B |  | 2 |
| Tn-peptides | Ac-A-Tn(Thr)-S-G |  | 1 & 2 |
| Ac-S-Tn(Thr)-Tn(Thr)-G |  | 1 & 2 |
| Ac-S-Tn(Thr)-A-G |  | 2 |
| Ac-S-Tn(Thr)-G-G |  | 1 & 2 |
| Ac-S-Tn(Thr)-S-G |  | 2 |
| Ac-P-Tn(Thr)-T-G |  | 1 & 2 |
| Ac-Tn(Ser)-Tn(Ser)-Tn(Ser)-G |  | 2 |
| Glycolipids | GT2 |  | 1 & 2 |
| GT3 |  | 1 & 2 |
| GD1b |  | 2 |
| GQ2 |  | 2 |
| Glycoproteins | Heat shock protein (Hsp90) | na | 1 & 2 |
| Thyroglobulin (Tg) | na | 2 |
| Alpha-1-acid glycoprotein | na | 2 |
| Fetuin | na | 2 |
| OSM | na | 2 |
| Lewis antigens | LeX |  | 1 |
| 6'-sulpho-LeA |  | 2 |
| Sialyl LeA |  | 2 |
| Tf-peptides | DTVPLPTAHGTSASSTG |  | 2 |
| DTVPLP-TF(Thr)-AHGTSASSTG |  | 2 |
| DTVPLPTAHGT-TF(Ser)-ASSTG |  | 2 |
| Other | Fuc-b |  | 1 & 2 |
| Heparin (Hep-5000) | na | 2 |
| Acetylated Heparin (Hep-N-acetylated) | na | 2 |
| DSLNT  |  | 2 |
| LNnH-11 |  | 2 |
| Ac-S-Ser(GlcNAcβ)-S-G |  | 2 |
| Maltopentaose |  | 2 |