Supplementary Information for

Glycoblotting-Based Ovo-Sulphoglycomics Reveals Phosphorylated *N*-Glycans as a Possible Host-Factor of AIV Prevalence in Waterfowls

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Abbreviation:

BOA	benzyloxyamine
DABP	3,4-diaminobenzophenone
MTT	3-methyl-1-p-tolyltriazene
LVP	low viral prevalence
HVP	high viral prevalence
VIP	variable importance to projection

Keywords: glycoblotting, ovo-sulphoglycomics, on-bead esterification, MTT, virus prevalence.

Table S1. The list of egg whites from various species of Order Anseriformes (4 families, 27 genera, 72 species) used in this study. Classification was based on Sibley's DNA-DNA hybridization.

Sample ID	Scientific name	Family	Sub-Family	Common Name
D1	Aix galericulata	Anatidae	Anatinae	Mandarin Duck
D2	Anas platyrhynchos	Anatidae	Anatinae	Mallard Duck
D3	Lophodytes cucullatus	Anatidae	Anatinae	Hooded Mergenser
D4	Aythya americana	Anatidae	Anatinae	Red head
D5	Anas versicolor	Anatidae	Anatinae	Silver Teal
D6	Anser anser	Anatidae	Anserinae	Graylag Goose
D7	Anser indicus	Anatidae	Anserinae	Bar Headed Goose
D8	Dendrocygna eytoni	Dendrocygnidae	Dendrocygninae	Plumed Whistling Duck
D9	Tadorna radjah	Anatidae	Anserinae	White Headed Shelduck
D10	Sarkidiornis melanotos	Anatidae	Anserinae	Knob-billed Goose
D11	Anseranas semipalmata	Anseranatidae	Anseranatidae	Magpie Goose
D12	Aix sponsa	Anatidae	Anatinae	Wood Duck
D13	Alopochen aegyptiaca	Anatidae	Anserinae	Egyptian Goose
D14	Anas platyrhynchos domesticus	Anatidae	Anatinae	White Call Duck
D15	Anser anser domesticus (America)	Anatidae	Anserinae	Buff Goose
D16	Anser anser domesticus (France)	Anatidae	Anserinae	Dewlap Toulouse Goose
D17	Anser anser domesticus (Germany)	Anatidae	Anserinae	Embdens Goose
D18	Anser canagicus	Anatidae	Anserinae	Emperor Goose
D19	Anser cygnoides domesticus	Anatidae	Anserinae	African Goose
D20	Anser cygnolaes aomesticus	Anatidae	Anserinae	Ductor China Goose
D21 D22	Anser cygnolaes aomesticus	Anatidae	Anserinae	Lassar white fronted Goose
D22 D23	Callonetta leuconhrys	Anatidae	Anstinae	Ringed Teal
D23	Dendrocygna arborea	Dendrocygnidae	Dendrocygninae	West Indian Whistling Duck
D24	Lophonetta speculariodes	Anatidae	Anatinae	Crested Duck
D25	Netta rufina	Anatidae	Anatinae	Red Crested Pochard
D20	Oxyura iamaicensis	Anatidae	Oxvurinae	Ruddy duck
D28	Chloephaga picta picta	Anatidae	Anserinae	Magellan Goose
D29	Branta leuconsis	Anatidae	Anserinae	Barnacle Goose
D30	Branta sandvicensis	Anatidae	Anserinae	Hawaiian Goose
D31	Anas gibberifrons	Anatidae	Anatinae	Indonesian Teal
D32	Anas laysanensis	Anatidae	Anatinae	Laysan Duck
D33	Anas luzonica	Anatidae	Anatinae	Philippine Duck
D34	Anas rubripes	Anatidae	Anatinae	American Black Duck
D35	Anas clypeata	Anatidae	Anatinae	Northern Shoveler
D36	Oxyura vittata	Anatidae	Oxyurinae	Lake Duck
D37	Anas melleri	Anatidae	Anatinae	Meller's Duck
D38	Oxyura australis	Anatidae	Oxyurinae	Blue-billed Duck
D39	Branta canadensis maxima	Anatidae	Anserinae	Canada Goose
D40	Dendrocygna viduata	Dendrocygnidae	Dendrocygninae	White-faced Whistling Duck
D41	Anser brachyrhynchus	Anatidae	Anserinae	Pink-footed Goose
D42	Chauna torquata	Anhimidae	Anhimidae	Southern Screamer
D43	Thalassornis leuconotos	Dendrocygnidae	Dendrocygninae	White-backed Duck
D44	Tadorna tadornoides	Anatidae	Anserinae	Australian Shelduck
D45	Chenonetta jubata	Anatidae	Anatinae	Australian Wood Duck
D46	Somateria mollissima	Anatidae	Anatinae	Common Eider
D47	Anser albifrons	Anatidae	Anserinae	Bad breasted Managemeen
D48	Mergus serraior	Anatidae	Anatinae	Lesser Seeur
D49	Ayinya ajjinis	Dandraavanidaa	Dondrooveningo	Plack balliad whistling Duck
D50	Clangula hyamalis	Apatidae	Anatinae	Longtailed Duck
D51	Anas discors	Anatidae	Anatinae	Blue-winged Teal
D52	Anus uiscors Orvura nunctata	Anatidae	Oxvurinae	Brac-willgen i tai
D55 D54	Anas strepera	Anatidae	Anatinae	Gadwall
D55	Heteronetta atricanilla	Anatidae	Anatinae	Black-headed Duck
D56	Anas superciliosa	Anatidae	Anatinae	Pacific black Duck
D57	Anser caerulescens	Anatidae	Anserinae	Snow Goose
D57	Avthva fulioula	Anatidae	Anatinae	Tuffed Duck
D59	Avthva ferina	Anatidae	Anatinae	Common Pochard
D60	Anas formosa	Anatidae	Anatinae	Baikal Teal
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D61	Dendrocygna bicolor	Dendrocygnidae	Dendrocygninae	Fulvous Whistling Duck
D62	Anas querquedula	Anatidae	Anatinae	Garganey
D63	Malacorhynchus membranaceus	Anatidae	Anatinae	Pink-eared Duck
D64	Anas hottentota	Anatidae	Anatinae	Hottentot Teal
D65	Anas georgica	Anatidae	Anatinae	Yellow-billed Pintail
D66	Biziura lobata	Anatidae	Oxyurinae	Musk Duck
D67	Cygnus atratus	Anatidae	Cygninae	Black swan
D68	Aythya australis	Anatidae	Anatinae	Hardhead
D69	Amazonetta brasiliensis	Anatidae	Anatinae	Brazilian Teal
D70	Lophonetta cristata	Anatidae	Anatinae	
D71	Anas crecca	Anatidae	Anatinae	Common Teal
D72	Tadorna tadorna	Anatidae	Anserinae	Common Shelduck

Table S2. List of 89 acidic *N*-glycans identified from the egg whites of 72 waterfowl species. Glycan structures were inferred from glycan composition based on the observed monoisotopic masses.

Glycan ID Observed (N=10) Glyconert (N=10) Construction (N=10) Optimize (N=10) A1 1094.339 972.274 -30.5 Hex3 Hex1Nc2 Sul Database Labs A2 1108.327 972.274 -30.5 Hex3 Hex1Nc2 Sul Glyconnect A3 1113.5373 1013.301 -4.2 Hex1 Hex1Nc2 Sul Glyconnect A4 1193.922 1013.310 -4.8 Hex2 Hex1Nc2 Sul Hex1 Hex1Nc2 Sul A6 1220.431 1134.325 -66.7 Hex1Nc2 Sul Hex1 Hex1Nc2 Sul A7 1295.303 1193.368 -109.5 Hex2 Hex1Nc2 Sul Glyconnect A8 1274.200 1175.353 -7.5 Hex1Nc1 Puol Ma3 GloNc2 Glyconnect A11 138.4419 1216.330 -28.2 Hex2 Hex1Nc4 Puol -4.2 A12 1418.430 1290.389 -4.8 Hex2 Sul + Ma3 GloNc2 Glyconnect A13 1422.409.4 133.441 -1.9 HexNc2 Hex1Nc4 Sul + Ma3 GloNc2 -4.1 A14 144.948 130.442 </th <th></th> <th>Observed</th> <th>Calculated</th> <th>Mass</th> <th></th> <th>Clyannaat</th>		Observed	Calculated	Mass		Clyannaat
Optimize Mass (M) = BOAL (M) = BOAL (Chan ID	Doserveu	Glycoform	Francis	Manasaaaharida composition	Detebase
Image Image Image Image A1 1094.339 972.274 -10.8 Hex3 Hex3Ac2 Sul A2 1108.327 972.284 -30.5 Hex3 Hex3Ac2 Sul A3 11135.373 1013.301 -4.2 Hex1 Hex3Ac3 Sul A4 1149.392 1013.310 -4.8 Hex1 Hex3Ac3 Sul A6 1270.431 1134.335 -66.7 Hex4 Hex3Ac2 Sul A6 1270.431 1134.335 -10.9 Hex2 Hex3Ac2 Sul A7 1295.303 1193.368 -10.9 Hex2 Hex3Ac2 Sul Hex2 Hex3Ac2 Sul A10 133.8419 1216.330 -28.2 Hex2 Hex1Ac4 Puol -10.4 A11 1352.441 1216.330 -48.3 Hex2 Sul + Man 3 GleNAc2 Glyconnect A13 1432.460 1292.389 -4.4 Hex2 Sul + Man 3 GleNAc2 Glyconnect A14 144.444.98 1304.462 -3.3 Hex1 HexNac1 Bui + Man 3 GleNAc2 Glyconnect A14 144.98 1304.464 -4.3 Hex1 HexNac1 BuA	Giycali ID	III ass, III/Z	Mass	DDD DDD	wonosaccharide composition	Links
A1 1094.339 972.274 -10.8 He33 Hex3Nex3A2 Phol He33 Hex3Nex3A2 Phol A2 1108.327 972.284 -30.5 He33 Hex3Nex3A2 Phol He32 Hex3Nex32 Phol A4 1149.392 1013.301 -4.2 Hex3 Hex3Nex32 Phol A5 1256.320 1134.337 -66.7 Hex4 Hex3Nex32 Phol A7 1295.303 1159.368 -109.5 Hex2 Hex3Nex3 Phol A7 1295.303 1175.353 -7.5 Hex3Nex1 Sul - Ma3 GleNA2 A10 1338.419 1216.380 -28.2 Hex2 Hex3Nex4 Phol A11 1352.412 1216.380 -28.2 Hex2 Hex3Nex4 Phol A12 1418.440 1295.380 -2.4 Hex2 Hex3Nex4 Phol A13 1432.440 1295.380 -3.3 Unknown structur A14 1441.4498 1305.426 -3.3 Hex1 Hex3Nex1 Phol A12 1418.440 1305.426 -3.3 Hex1 Hex3Nex2 Phol A14 1441.4441.498 1305.426 -3.4 Hex1 Hex3Nex2 Phol		[[]]] = 11]	[M – BOA]	phm		Links
A.2 1108.327 972.284 -30.5 Hex3 Hex1Na2 Sul Givonnect A.4 1143.327 1013.301 4.8 Hex2 Hex1Na2 Sul A.4 1126.320 1013.312 -66.7 Hex4 Hex1Na2 Sul A.6 1220.431 1134.327 -66.7 Hex4 Hex1Na2 Sul A.7 1229.503 1153.363 -109.5 Hex2 Hex1Na2 dHx1 Publ A.8 1297.420 1175.363 -7.5 HexNacl Sul + Mu3 GleNa2 A.10 138.4419 1216.380 -28.2 Hex2 Hex1Na4 Sul + Mu3 GleNa2 A.11 1352.412 1216.380 -40.5 Hex2 Hex1Na4 Sul + Mu3 GleNa2 A.14 144.484 1306.426 -3.3 Uknow structure A.14 144.484 1306.426 -3.3 Hex1Na2 GleNa2 A.15 1443.485 132.141 -1.9 Hex2 Hex1Na2 GleNa2 A.14 1443.485 132.146	A1	1094.339	972.274	-10.8	Hex3 HexNAc2 Su1	
A3 1135.373 1013.301 4-2 Hex1 HexNa Sul A4 1149.392 1013.310 4.8 Hex2 HexNa Sul A5 1250.30 1134.336 14.1 Hex4 HexNa 2 Ptol A7 1295.303 1159.368 -100.5 Hex1 HexNa 2 HexNa 2 HexNa 2 HexNa 2 HexNa 2 HexNa 1 HexNa 1 HexNa 2 Glyconnect A9 131.1445 1175.353 3.7 HexNa 1 HexNa 2 HexNa 4 HexNa 2 Glyconnect A10 1335.419 1216.380 -28.2 Hex2 LexNa 4 Phol Hma3 GleNac2 A11 1352.412 1216.380 -40.5 Hex2 Sul + Mm3 GleNac2 Glyconnect A11 1325.412 1216.380 -43.5 Hex2 Sul + Mm3 GleNac2 Glyconnect A13 143.448 1321.411 -19 Hex1Nac1 dilex1 Sul + Mm3 GleNac2 Glyconnect A16 149.497 1337.406 -5.3 Hex1Nac2 Mex1 Mua3 GleNac2 Ala A18 1500.497 1378.432 7.5 Hex1Nac2 Mex1 Mua3 GleNac2 Glyconnect A20 1580.496 1488.432 5.5 Hex1Nac2 M	A2	1108.327	972.284	-30.5	Hex3 HexNAc2 Pho1	Glyconnect
A4 1143.32 1013.310 4.8. Hex2 HexNac2 Phol A5 1256.320 1134.327 -66.7 Hex4 HexNac2 Phol A6 1270.431 1134.336 14.1 Hex2 HexNac2 Phol A8 1297.420 1175.353 -75.5 Hex1 RexNac2 diffest Phol A9 1311.445 1175.353 3.7 Hex1 RexNac4 Sul + Man3 GleNac2 A10 1338.419 1216.330 -40.5 Hex2 HexNac4 Phol A11 1352.412 1216.330 -40.5 Hex2 HexNac4 Sul + Man3 GleNac2 A14 1443.466 1296.380 -18.9 Hex2 Sul + Man3 GleNac2 A14 1443.463 1305.426 -3.3 HexNac1 diffex1 Sul + Man3 GleNac2 A15 1443.485 1321.411 -1.9 HexNac2 Mex1 Man3 GleNac2 A16 1459.475 1337.406 8.1 HexNac2 Mex1 Man3 GleNac2 A17 1475.505 1337.416 8.1 HexNac2 Mex1 Man3 GleNac2 A18 1580.496 133 Hex1 HexNac2 Mex1 Man3 GleNac2 A19	A3	1135.373	1013.301	-4.2	Hex2 HexNAc3 Su1	
A5 1256.320 1134.327 -66.7 HexH lexNac2 Sul A7 1227.043 1134.336 14.1 HexNac1 Mich NexAc3 diffext Phol A7 1225.303 1175.353 -7.5 HexNac1 Sul+ Man3 GlobAc2 Gipvonnect A9 131.1445 1175.353 3.7 HexNac1 Sul+ Man3 GlobAc2 Gipvonnect A10 1338.419 1216.330 -28.2 HexNac1 Sul+ Man3 GlobAc2 Gipvonnect A11 1352.412 1216.330 -40.5 Hex2 Nuch Man3 GlobAc2 Gipvonnect A13 1432.469 1295.389 2.4 Hex2 Piol + Man3 GlobAc2 Gipvonnect A14 144.484 1305.426 -3.3 Unknown structure Man3 GlobAc2 A16 1459.475 1337.406 5.3 Hex1 Nex1 Man3 GlobAc2 Gipvonnect A18 1500.497 1378.442 -5.5 Hex1 Mex1Ac2 Piol + Man3 GlobAc2 Gipvonnect A20 1580.496 1488.442 -5.5 Hex1 Man3 GlobAc2 Gipvonnect A21 1989.521 1467.469	A4	1149.392	1013.310	4.8	Hex2 HexNAc3 Pho1	
A6 127.0431 1134.336 14.1 Head HenXack dHext Phol A7 1295.303 1159.368 -109.5 HexNet1Sul + Man3 GleNAac2 Glyconnect A8 1297.420 1175.353 -7.5 HexNacl Pool + Man3 GleNAac2 Glyconnect A9 1311.445 1175.363 3.7 HexNacl Pool + Man3 GleNAac2 Glyconnect A10 1338.419 1216.380 -28.2 HexX ElexNac4 Sul Han3 GleNAac2 A11 1324.412 1216.380 -8.5 HexX Sul HexX Han3 GleNAac2 Glyconnect A13 1432.469 1296.389 2.4 HexX Sul + Man3 GleNAac2 Glyconnect A14 1441.498 1337.406 5.3 HexNac1 Sul + Man3 GleNAac2 HAn3 A15 1435.475 HexNac2 Sul + Man3 GleNAac2 Glyconnect A18 1500.497 1378.443 -7.5 HexNac2 Sul + Man3 GleNAac2 Glyconnect A19 1518.496 1458.432 8.1 HexNac1 dHex2 Sul + Man3 GleNAac2 Glyconnect A20 1589.496 1.31 HexNac2 dHex1 Sul + Man3 GleN	A5	1256.320	1134.327	-66.7	Hex4 HexNAc2 Su1	
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A8 1297.420 1175.353 -7.5 HexNAcl Sul + Man3 GleNAc2 Cliveonnect A10 138.419 1216.580 -28.2 Hex2 HexNAc4 Sul 1 A11 1352.412 1216.530 -40.5 Hex2 HexNAc4 Phot 1 A11 1352.412 1216.530 -40.5 Hex2 Sul + Man3 GleNAc2 1 A13 1432.469 1296.380 -18.9 Hex2 Phot + Man3 GleNAc2 1 A14 1441.448 1306.426 -3.3 Hcx1 HexNAc1 Sul + Man3 GleNAc2 1 A15 1443.485 1327.416 8.1 HexNAc2 Inbit + Man3 GleNAc2 1 A17 1473.505 1337.406 5.3 Hcx1Ac2 Phot + Man3 GleNAc2 1 A18 1500.497 1378.443 7.5 HexNAc2 Phot + Man3 GleNAc2 1 A20 1580.496 1458.432 -5.1 Hex3 Phot + Man3 GleNAc2 1 A21 1580.496 1458.432 -5.1 Hex3 Phot + Man3 GleNAc2 1 A22 1594.531 1467.469 -1.1	A7	1295.303	1159.368	-109.5	Hex2 HexNAc3 dHex1 Pho1	
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A14 144 144 148 132(41) -1.9 HextNacl HextS ul + Man3 GloNAc2 A16 1459475 1337.406 -5.3 Hext HexNacl Sul + Man3 GloNAc2 A17 1473.505 1337.416 8.1 Hext HexNacl Sul + Man3 GloNAc2 A18 1500.497 1378.433 -8.5 HexNacl Sul + Man3 GloNAc2 Glyconnect A19 1514.530 1378.442 -5.5 HexNacl Sul + Man3 GloNAc2 Glyconnect A20 1580.496 1458.432 -8.1 HexNacl Hex3 Pul + Man3 GloNAc2 Glyconnect A21 1589.525 1467.469 -13.1 HexNacl dHex2 Pul + Man3 GloNAc2 Glyconnect A23 1603.574 1467.479 11.4 HexNacl dHex1 Sul + Man3 GloNAc2 Glyconnect A24 1605.533 1489.469 -2.2 Hex2 HexNacl Sul + Man3 GloNAc2 Glyconnect A25 1662.556 1540.496 -4.1 HexNac2 Sul + Man3 GloNAc2 Glyconnect A28 1662.556 1540.496 -4.1 HexNac2 Sul + Man3 GloNAc2 Glyconnect	A13	1432.469	1293.389	2.4	Hex2 Pho1 + Man3 GlcNAc2	Glyconnect
A15 1443.485 1321.411 -1.9 HexNAcl dilexi Sul + Man3 GleNAc2 A16 1459.475 1337.406 -5.3 Hex1 HexNAcl Sul + Man3 GleNAc2 A17 1473.505 1337.416 8.1 Hex1 HexNAcl Sul + Man3 GleNAc2 Glyconnect A18 1500.497 1378.433 -8.5 HexNAc2 Phol + Man3 GleNAc2 Glyconnect A20 1580.496 1458.432 -8.1 Hex3 Sul + Man3 GleNAc2 Glyconnect A21 1589.525 1467.469 -13.1 HexNAc1 dilex2 Sul + Man3 GleNAc2 Glyconnect A22 1594.528 1458.442 5.5 Hex3 Phol + Man3 GleNAc2 Glyconnect A23 1605.574 1467.479 -1.7 HexXAc1 dilex1 Sul + Man3 GleNAc2 Glyconnect A24 1665.58 1524.491 -5.9 HexXAc2 Hol + Man3 GleNAc2 Glyconnect A25 1625.56 1540.486 -4.1 Hex1 HexXAc2 Phol + Man3 GleNAc2 Glyconnect A28 1666.556 1540.495 19.8 Hex1 HexXAc2 Phol + Man3 GleNAc2 Glyconnect <	A14	1441.498	1305.426	-3.3	Unknown structure	
A16 1459.475 137.406 -5.3 Hexl HexNAcl Sul + Man3 GleNAc2 A17 1473.505 1337.416 8.1 Hexl HexNAcl Sul + Man3 GleNAc2 A18 1500.497 1378.433 -8.5 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A19 1514.530 1378.443 -8.5 HexNAc2 Phol + Man3 GleNAc2 Glyconnect A20 1580.496 1458.432 -8.1 Hex3 Sul + Man3 GleNAc2 Glyconnect A21 1599.525 1467.469 -1.3.1 HexNAc1 ditex2 Phol + Man3 GleNAc2 Glyconnect A23 1605.574 1467.479 11.4 HexNAc1 ditex1 Sul + Man3 GleNAc2 Glyconnect A24 1605.533 1499.459 -1.7 Hex1 HexNAc1 Sul + Man3 GleNAc2 Glyconnect A25 1621.533 1499.469 -2.2 Hex2 HexNAc1 Phol + Man3 GleNAc2 Glyconnect A26 1635.542 1499.469 -1.2 Hex1 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A27 1646.558 1540.486 -4.1 Hex1 HexNAc2 Hex1 + Man3 GleNAc2 Glyconnect	A15	1443.485	1321.411	-1.9	HexNAc1 dHex1 Su1 + Man3 GlcNAc2	
A17 1473.505 1337.416 8.1 Hexl Nexl Phol + Man3 GleNAc2 A18 1500.497 1378.433 -8.5 HexNAc2 Sul + Man3 GleNAc2 A20 1580.496 1438.432 -7.5 HexNAc2 Phol + Man3 GleNAc2 A20 1580.496 1438.442 7.5 Hex3 Sul + Man3 GleNAc2 Glyconnect A21 1589.525 1467.469 -1.31 HextAc1 direx2 Sul + Man3 GleNAc2 Glyconnect A22 1594.528 1458.442 5.5 Hex3 Phol + Man3 GleNAc2 Glyconnect A23 1605.574 1467.479 11.4 HexNAc1 direx2 Sul + Man3 GleNAc2 Glyconnect A24 1665.58 1524.491 -5.9 HexNac2 Litex1 Fun3 GleNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNac2 Phol + Man3 GleNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNac2 Phol + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 Hex1 Nex2 Phol + Man3 GleNAc2 Glyconnect A31 1717.608	A16	1459.475	1337.406	-5.3	Hex1 HexNAc1 Su1 + Man3 GlcNAc2	
A18 1500.497 1378.433 -8.5 HexNAc2 Sul + Man3 GleNAc2 GleNAc2 A19 1514.530 1378.442 7.5 HexNAc2 Phol + Man3 GleNAc2 Glyconnect A20 1580.965 1458.432 -8.1 HexNAc1 difex2 Sul + Man3 GleNAc2 Glyconnect A21 1589.525 1467.469 -13.1 HexNAc1 difex2 Sul + Man3 GleNAc2 Glyconnect A22 1594.528 1458.442 5.5 HexNAc1 difex1 Sul + Man3 GleNAc2 Glyconnect A23 1603.574 1467.479 11.4 HexNAc1 difex1 Sul + Man3 GleNAc2 Glyconnect A24 1605.533 1499.459 -1.7 Hex2 HexNAc1 bitex1 Sul + Man3 GleNAc2 Glyconnect A26 1635.542 1499.469 -2.2 Hex2 HexNAc1 Pho1 + Man3 GleNAc2 Glyconnect A28 1662.556 1540.486 4.1 Hex1 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A30 1717.608 1581.522 5.6 Hex1Mac2 Sul + Man3 GleNAc2 Glyconnect A31 1717.600 1633.57 -6.8 Unknown structure	A17	1473.505	1337.416	8.1	Hex1 HexNAc1 Pho1 + Man3 GlcNAc2	
A19 1514.530 1378.442 7.5 HexNAc2 Phol + Man3 GleNAc2 A20 1580.496 1458.432 -8.1 Hex3 Sul + Man3 GleNAc2 A21 1589.525 1467.469 -13.1 HexNAc1 dHex2 Sul + Man3 GleNAc2 A22 1594.528 1458.442 5.5 Hex3 Phol + Man3 GleNAc2 A23 1603.574 1467.479 11.4 HexNAc1 dHex1 Sul + Man3 GleNAc2 A24 1605.533 1483.464 -4.8 Hex1 HexNAc1 dHex1 Sul + Man3 GleNAc2 A25 1621.533 1499.459 -1.7 Hex2 HexNAc1 Phol + Man3 GleNAc2 A26 1635.542 1499.469 -2.2 HexX HexNAc1 Phol + Man3 GleNAc2 A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Phol + Man3 GleNAc2 A30 1703.584 1581.512 -2.8 HexNac3 Phol + Man3 GleNAc2 A31 1717.608 1581.522 5.6 HexNac3 Phol + Man3 GleNAc2 A33 1731.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Sul + Man3 GleNAc2 A34 1704.607 1628.502 50.0 <td>A18</td> <td>1500.497</td> <td>1378.433</td> <td>-8.5</td> <td>HexNAc2 Su1 + Man3 GlcNAc2</td> <td>Glyconnect</td>	A18	1500.497	1378.433	-8.5	HexNAc2 Su1 + Man3 GlcNAc2	Glyconnect
A20 1580.496 1458.432 -8.1 Hex3 Sul + Man3 GleNAc2 Glyconnect A21 1589.525 1467.469 -13.1 HexNAc1 dHex2 Sul + Man3 GleNAc2 Glyconnect A23 1603.574 1467.479 11.4 HexNAc1 dHex1 Sul + Man3 GleNAc2 Glyconnect A24 1605.533 1483.464 -4.8 Hex1 HexNAc1 dHex1 Sul + Man3 GleNAc2 Glyconnect A25 1621.533 1499.459 -1.7 Hex2 HexNAc1 Sul + Man3 GleNAc2 Glyconnect A26 1635.542 1499.469 -2.2 Hex2 HexNAc1 Sul + Man3 GleNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A30 1703.584 1581.522 5.6 HexNac3 Sul + Man3 GleNAc2 Glyconnect A31 171.608 1581.522 5.6 HexNac1 Sul + Man3 GleNAc2 Glyconnect A33 1761.509 1629.532 0.1 Hex1 HexNAc1 Mex2 Sul + Man3 GleNAc2 Glyconnect A33 1761.607 1628.502 5.0 Hex1 HexNAc1 dHex2 Sul + Ma	A19	1514.530	1378.442	7.5	HexNAc2 Pho1 + Man3 GlcNAc2	
A21 1589.525 1467.469 -13.1 HexNAc1 dHex2 2u1 + Man3 GleNAc2 A22 1594.528 1458.442 5.5 Hex3 Pho1 + Man3 GleNAc2 Glyconnect A23 1603.574 1467.479 11.4 HexNAc1 dHex1 Su1 + Man3 GleNAc2 Glyconnect A24 1605.533 1499.459 -1.7 Hex2 HexNAc1 Su1 + Man3 GleNAc2 Glyconnect A26 1635.542 1499.469 -2.2 Hex2 HexNAc1 Pho1 + Man3 GleNAc2 Glyconnect A28 1662.556 1540.496 -2.2 Hex1 HexNAc2 Su1 + Man3 GleNAc2 Glyconnect A28 1662.556 1540.495 19.8 Hex1 HexNAc2 Pho1 + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Pho1 + Man3 GleNAc2 Glyconnect A31 1717.508 1581.522 5.6 HexNac3 Pho1 + Man3 GleNAc2 Glyconnect A33 1751.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Su1 + Man3 GleNAc2 A34 A34 1764.667 1628.502 5.00 Hex1 HexNAc1 dHex2 Su1 + Man3 GleNAc2 Glyco	A20	1580.496	1458.432	-8.1	Hex3 Su1 + Man3 GlcNAc2	Glyconnect
A22 1594.528 1458.442 5.5 Hex3 Phol + Man3 GleNAc2 Glyconnect A23 1603.574 1467.479 11.4 HexNAc1 direx 2Phol + Man3 GleNAc2 Glyconnect A24 1605.533 1483.464 -4.8 Hex1 HexNAc1 direx 1Su1 + Man3 GleNAc2 Glyconnect A25 1635.542 1499.469 -2.2 Hex2 HexNAc1 Pho1 + Man3 GleNAc2 Glyconnect A26 1662.556 1540.495 -9.2 Hex1 HexNAc2 duex1 Su1 + Man3 GleNAc2 Glyconnect A28 1662.556 1540.495 -9.8 Hex1 HexNAc2 bn1 + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Su1 + Man3 GleNAc2 Glyconnect A31 1717.608 1581.522 -5.6 HexNac3 Su1 + Man3 GleNAc2 Glyconnect A33 1751.599 1629.522 0.1 Hex1 HexNAc1 Huez2 Su1 + Man3 GleNAc2 Glyconnect A34 1764.667 1628.502 50.0 Hex1 HexNAc1 But + Man3 GleNAc2 Glyconnect A35 1765.618 629.522 5.3 Hex1 HexNAc2 But	A21	1589.525	1467.469	-13.1	HexNAc1 dHex2 Su1 + Man3 GlcNAc2	
A23 1603.574 1467.479 11.4 HexNAcl dHex2 Phol + Man3 GlcNAc2 A24 1605.533 1493.464 -4.8 HexI HexNAcl dHex1 Sul + Man3 GlcNAc2 Glyconnect A25 1621.533 1499.459 -1.7 Hex2 HexNAcl Phol + Man3 GlcNAc2 A26 1635.542 1499.469 -2.2 Hex2 HexNAcl Phol + Man3 GlcNAc2 A27 1646.558 1524.491 -5.9 HexNac2 dHex1 Sul + Man3 GlcNAc2 A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Phol + Man3 GlcNAc2 Glyconnect A29 1676.605 1540.495 19.8 Hex1 HexNac2 Phol + Man3 GlcNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Sul + Man3 GlcNAc2 Glyconnect A31 1751.590 1629.522 0.1 Hex1 HexNAc1 Mex2 Sul + Man3 GlcNAc2 Glyconnect A34 1764.667 1628.502 50.0 Hex1 HexNAc1 Mex2 Sul + Man3 GlcNAc2 Glyconnect A35 1765.618 1629.512 5.3 Hex1 HexNAc1 dHex2 Sul + Man3 GlcNAc2 Glyconnect A36	A22	1594.528	1458.442	5.5	Hex3 Pho1 + Man3 GlcNAc2	Glyconnect
A24 1605.533 1483.464 -4.8 Hex1 HexNAc1 IdHex1 Su1 + Man3 GlcNAc2 Glyconnect A25 1621.533 1499.459 -1.7 Hex2 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A26 1635.5542 1499.469 -2.2 Hex2 HexNAc1 Fuh1 + Man3 GlcNAc2 Glyconnect A27 1646.558 1524.491 -5.9 HexNAc2 GHex1 Su1 + Man3 GlcNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A30 1703.584 1581.512 -2.8 Hex1ma3 SlcNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Pho1 + Man3 GlcNAc2 Glyconnect A32 1749.602 1613.537 -6.8 Unknown structure A33 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 Buch Man3 GlcNAc2 Glyconnect A35 1765.618 1629.532 5.3 Hex1 HexNAc1 Hex1 Su1 + Man3 GlcNAc2 Glyconnect A36 1767.620 1645.517 1.4.8 Hex2 HexNAc1 Hex1 Su1 + Man3 GlcNAc2	A23	1603.574	1467.479	11.4	HexNAc1 dHex2 Pho1 + Man3 GlcNAc2	
A25 1621.533 1499.459 -1.7 Hex2 HexNAc1 Su1 + Man3 GlcNAc2 A26 1635.542 1499.469 -2.2 Hex2 HexNAc1 Pho1 + Man3 GlcNAc2 A27 1646.558 1524.491 -5.9 HexNAc2 dHex1 Pho1 + Man3 GlcNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Pho1 + Man3 GlcNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Pho1 + Man3 GlcNAc2 Glyconnect A32 1749.602 1613.537 -6.8 Unknown structure A33 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 Mex2 Pho1 + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNac1 flext Pho1 + Man3 GlcNAc2 A36 1767.620 1645.517 1.4.8 Hex2 HexNac1 flext Pho1 + Man3 GlcNAc2 A38 1792.814 1670.558 12.5 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 A40 1806.657 1670.558 12.5 H	A24	1605.533	1483.464	-4.8	Hex1 HexNAc1 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
A26 1635.542 1499.469 -2.2 Hex1Ac2 HexNAc1 Pho1 + Man3 GleNAc2 A27 1646.558 1524.491 -5.9 HexNAc2 dlex1 Sul + Man3 GleNAc2 Glyconnect A28 1662.556 1540.485 -4.1 Hex1 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Sul + Man3 GleNAc2 Glyconnect A31 1717.608 1581.512 -5.6 HexNac3 Sul + Man3 GleNAc2 Glyconnect A33 1741.602 1613.537 -6.8 Unknown structure A33 A33 1764.667 1628.502 50.0 Hex1 HexNAc1 Mex2 Sul + Man3 GleNAc2 Hex3 HexNAc2 Pho1 + Man3 GleNAc2 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 Mex1 Sul + Man3 GleNAc2 Glyconnect A35 1767.620 1645.517 14.8 Hex2 HexNAc1 Mex1 Sul + Man3 GleNAc2 Glyconnect A38 1792.814 1670.558 12.2 Hex1 HexNAc2 Hex2 Sul + Man3 GleNAc2 Glyconnect A40 1806.657 1670.558 12.5 <thhexnac2 +="" glenac2<="" hex2="" man3="" sul="" td=""><td>A25</td><td>1621.533</td><td>1499.459</td><td>-1.7</td><td>Hex2 HexNAc1 Su1 + Man3 GlcNAc2</td><td></td></thhexnac2>	A25	1621.533	1499.459	-1.7	Hex2 HexNAc1 Su1 + Man3 GlcNAc2	
A27 1646.558 1524.491 -5.9 HexNAc2 dHex1 Su1 + Man3 GleNAc2 Glyconnect A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Su1 + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Su1 + Man3 GleNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Su1 + Man3 GleNAc2 Glyconnect A32 1749.4002 1613.537 -6.8 Unknown structure A33 A33 1751.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Su1 + Man3 GleNAc2 A34 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 dHex2 Su1 + Man3 GleNAc2 A35 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 Su1 + Man3 GleNAc2 Glyconnect A38 1792.814 1670.549 105.0 HexNAc2 Hex2 No1 + Man3 GleNAc2 Glyconnect A39 1797.610 1661.521 -2.1 Hex3 HexNAc2 Hex1 Su1 + Man3 GleNAc2 Glyconnect A40 1806.657 1670.558 12.5 Hex1 HexNAc2 Hex1 Su1 + Man3 GleNAc2	A26	1635.542	1499.469	-2.2	Hex2 HexNAc1 Pho1 + Man3 GlcNAc2	
A28 1662.556 1540.486 -4.1 Hex1 HexNAc2 Sul + Man3 GleNAc2 Glyconnect A29 1676.605 1540.495 19.8 Hex1 HexNAc2 Phol + Man3 GleNAc2 Glyconnect A30 1703.584 1581.512 -2.8 HexNac3 Sul + Man3 GleNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Phol + Man3 GleNAc2 Glyconnect A32 1749.602 1613.537 -6.8 Unknown structure A34 A33 1751.599 1629.522 0.1 Hex1 HexNAc1 Mex2 Sul + Man3 GleNAc2 A34 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 dHex2 Sul + Man3 GleNAc2 Glyconnect A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex2 Sul + Man3 GleNAc2 Glyconnect A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Sul + Man3 GleNAc2 Glyconnect A38 1792.814 1670.549 105.0 Hex3 HexNac1 Phol + Man3 GleNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Sul + Man3 GleNAc2	A27	1646.558	1524.491	-5.9	HexNAc2 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
A29 1676.605 1540.495 19.8 Hex1 HexNAc2 Pho1 + Man3 GlcNAc2 A30 1703.584 1581.512 -2.8 HexNac3 Su1 + Man3 GlcNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Pho1 + Man3 GlcNAc2 Glyconnect A32 1749.602 1613.537 -6.8 Unknown structure A33 1751.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Su1 + Man3 GlcNAc2 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 BucA Su1 + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 BucA Su1 + Man3 GlcNAc2 Glyconnect A36 1767.620 1645.517 14.8 Hex2 HexNAc1 BucA Su1 + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.558 12.5 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 Hex2 Nac2 Su1 + Man3 GlcNAc2 Glyconnect A44 1828.601	A28	1662.556	1540.486	-4.1	Hex1 HexNAc2 Su1 + Man3 GlcNAc2	Glyconnect
A30 1703.584 1581.512 -2.8 HexNac3 Sul + Man3 GlcNAc2 Glyconnect A31 1717.608 1581.522 5.6 HexNac3 Phol + Man3 GlcNAc2 1749.602 1613.537 -6.8 Unknown structure 1833 1751.599 1629.522 0.1 Hex1 HexNAc1 Mex2 Sul + Man3 GlcNAc2 1833 1751.599 1629.522 0.1 Hex1 HexNAc1 Mex2 Sul + Man3 GlcNAc2 1833 1765.618 1629.532 5.3 Hex1 HexNAc1 Mex2 Phol + Man3 GlcNAc2 1836 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Sul + Man3 GlcNAc2 Glyconnect 1833 1792.814 1670.549 105.0 Hex1NAc2 dHex2 Phol + Man3 GlcNAc2 Glyconnect 1838 1792.814 1670.558 12.5 HexNAc2 dHex2 Phol + Man3 GlcNAc2 Glyconnect 1441 1806.657 1670.558 12.5 Hex1NAc2 dHex2 Phol + Man3 GlcNAc2 Glyconnect 1442 1824.608 1702.538 -3.7 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect 1443 1838.661 1702.538 -3.7 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect 1444 1865.620 1743.565 -11.7	A29	1676.605	1540.495	19.8	Hex1 HexNAc2 Pho1 + Man3 GlcNAc2	
A31 1717.608 1581.522 5.6 HexNac3 Phol + Man3 GlcNAc2 A32 1749.602 1613.537 -6.8 Unknown structure A33 1751.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Su1 + Man3 GlcNAc2 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 dHex2 Su1 + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 Hex1MexAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A44 1805.620 1743.565 -	A30	1703.584	1581.512	-2.8	HexNac3 Su1 + Man3 GlcNAc2	Glyconnect
A32 1749.602 1613.537 -6.8 Unknown structure A33 1751.599 1629.522 0.1 Hex1 HexNAc1 Mex2 Su1 + Man3 GlcNAc2 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 MexAc1 Su1 + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex2 Pho1 + Man3 GlcNAc2 A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1661.521 6.6 Hex3 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A31	1717.608	1581.522	5.6	HexNac3 Pho1 + Man3 GlcNAc2	
A33 1751.599 1629.522 0.1 Hex1 HexNAc1 dHex2 Su1 + Man3 GlcNAc2 A34 1764.667 1628.502 50.0 Hex1 HexNAc1 NeuAc1 Su1 + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex2 Pho1 + Man3 GlcNAc2 A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 Hex3 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1668.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A44 1865.200 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect <td>A32</td> <td>1749.602</td> <td>1613.537</td> <td>-6.8</td> <td>Unknown structure</td> <td></td>	A32	1749.602	1613.537	-6.8	Unknown structure	
A34 1764.667 1628.502 50.0 Hex1 HexNAc1 NeuAc1 Sul + Man3 GlcNAc2 A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex1 Sul + Man3 GlcNAc2 A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Sul + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Sul + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 HexNAc2 dHex2 Sul + Man3 GlcNAc2 Glyconnect A40 1806.657 1661.521 6.6 Hex3 HexNAc2 dHex2 Sul + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Sul + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.555 -11.7 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A44 1889.924 1766.543 161.1 Hex4 dHex1 Sul + Man3 GlcNAc2	A33	1751.599	1629.522	0.1	Hex1 HexNAc1 dHex2 Su1 + Man3 GlcNAc2	
A35 1765.618 1629.532 5.3 Hex1 HexNAc1 dHex2 Pho1 + Man3 GlcNAc2 A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A39 1797.610 1661.521 6.6 Hex3 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A44 1888.924 1766.543 161.1 Hex4 HexNAc3 Su1 + Man3	A34	1764.667	1628.502	50.0	Hex1 HexNAc1 NeuAc1 Su1 + Man3 GlcNAc2	
A36 1767.620 1645.517 14.8 Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A39 1797.610 1661.521 6.6 Hex3 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.575 4.8 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A44 1886.61 1702.543 161.1 Hex4 HexNac3 Su1 + Man3 GlcNAc2 Glyconnect A44 1886.520 1743.575 4.8 Hex1	A35	1765.618	1629.532	5.3	Hex1 HexNAc1 dHex2 Pho1 + Man3 GlcNAc2	
A37 1783.585 1661.512 -2.1 Hex3 HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A38 1792.814 1670.549 105.0 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A39 1797.610 1661.521 6.6 Hex3 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4	A36	1767.620	1645.517	14.8	Hex2 HexNAc1 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
A38 1792.814 1670.549 105.0 HexNAc2 dHex2 Sul + Man3 GlcNAc2 A39 1797.610 1661.521 6.6 Hex3 HexNAc1 Phol + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Phol + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Sul + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Phol + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Sul + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.82 1784.601 2.3 HexA HexNAc1 Sul + Man3 GlcNAc2	A37	1783.585	1661.512	-2.1	Hex3 HexNAc1 Su1 + Man3 GlcNAc2	Glyconnect
A39 1797.610 1661.521 6.6 Hex3 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 AdHx1 Su1 + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexA HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 P	A38	1792.814	1670.549	105.0	HexNAc2 dHex2 Su1 + Man3 GlcNAc2	
A40 1806.657 1670.558 12.5 HexNAc2 dHex2 Phol + Man3 GlcNAc2 A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Sul + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Phol + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Phol + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Sul + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 Hex1 HexNAc1 Sul + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 Hex1 HexNAc2 dHex3 Phol + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Phol + Man3 GlcNAc2 <td>A39</td> <td>1797.610</td> <td>1661.521</td> <td>6.6</td> <td>Hex3 HexNAc1 Pho1 + Man3 GlcNAc2</td> <td>Glyconnect</td>	A39	1797.610	1661.521	6.6	Hex3 HexNAc1 Pho1 + Man3 GlcNAc2	Glyconnect
A41 1808.607 1686.544 -7.6 Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1	A40	1806.657	1670.558	12.5	HexNAc2 dHex2 Pho1 + Man3 GlcNAc2	
A42 1824.608 1702.538 -3.7 Hex2 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Sul + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 HextMac2 dHex3 Sul + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 <td>A41</td> <td>1808.607</td> <td>1686.544</td> <td>-7.6</td> <td>Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2</td> <td>Glyconnect</td>	A41	1808.607	1686.544	-7.6	Hex1 HexNAc2 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
A43 1838.661 1702.548 19.5 Hex2 HexNAc2 Pho1 + Man3 GlcNAc2 A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Pho1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 Hext HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HextAc2 dHex3 Pho1 + Man3 GlcNAc2 Glyconnect A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnec	A42	1824.608	1702.538	-3.7	Hex2 HexNAc2 Su1 + Man3 GlcNAc2	Glyconnect
A44 1865.620 1743.565 -11.7 Hex1 HexNAc3 Sul + Man3 GlcNAc2 Glyconnect A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Phol + Man3 GlcNAc2 Glyconnect A46 1888.924 1766.543 161.1 Hex4 dHex1 Sul + Man3 GlcNAc2 Glyconnect A47 1906.655 1784.592 -7.2 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Phol + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 HextAdex2 dHex3 Phol + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Phol + Man3 GlcNAc2 Glyconnect A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Sul + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Phol + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Sul + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 H	A43	1838.661	1702.548	19.5	Hex2 HexNAc2 Pho1 + Man3 GlcNAc2	
A45 1879.661 1743.575 4.8 Hex1 HexNAc3 Pho1 + Man3 GlcNAc2 A46 1888.924 1766.543 161.1 Hex4 dHex1 Su1 + Man3 GlcNAc2 A47 1906.655 1784.592 -7.2 HexNAc4 Su1 + Man3 GlcNAc2 A48 1920.682 1784.601 2.3 HexNAc4 Pho1 + Man3 GlcNAc2 A49 1945.612 1823.565 -15.3 Hex4 HexNAc1 Su1 + Man3 GlcNAc2 A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A56 2009.653 1873.638 -30.7 Hex3 HexNAc3 dH	A44	1865.620	1743.565	-11.7	Hex1 HexNAc3 Su1 + Man3 GlcNAc2	Glyconnect
A46 1888.924 1766.543 161.1 Hex4 dHex1 Su1 + Man3 GlcNAc2 A47 1906.655 1784.592 -7.2 HexNAc4 Su1 + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Pho1 + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 Hext HexNAc1 Su1 + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 Glyconnect A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 Glyconnect A56 2009.653 1873.638 -30.7 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 <td>A45</td> <td>1879.661</td> <td>1743.575</td> <td>4.8</td> <td>Hex1 HexNAc3 Pho1 + Man3 GlcNAc2</td> <td></td>	A45	1879.661	1743.575	4.8	Hex1 HexNAc3 Pho1 + Man3 GlcNAc2	
A47 1906.655 1784.592 -7.2 HexNAc4 Sul + Man3 GlcNAc2 Glyconnect A48 1920.682 1784.601 2.3 HexNAc4 Phol + Man3 GlcNAc2 Glyconnect A49 1945.612 1823.565 -15.3 Hex4 HexNAc1 Sul + Man3 GlcNAc2 Glyconnect A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Phol + Man3 GlcNAc2 Glyconnect A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Sul + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Phol + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Sul + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Sul + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Phol + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex1 Sul + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3	A46	1888.924	1766.543	161.1	Hex4 dHex1 Su1 + Man3 GlcNAc2	
A48 1920.682 1784.601 2.3 HexNAc4 Pho1 + Man3 GlcNAc2 A49 1945.612 1823.565 -15.3 Hex4 HexNAc1 Su1 + Man3 GlcNAc2 A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A47	1906.655	1784.592	-7.2	HexNAc4 Su1 + Man3 GlcNAc2	Glyconnect
A49 1945.612 1823.565 -15.3 Hex4 HexNAc1 Su1 + Man3 GlcNAc2 A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A48	1920.682	1784.601	2.3	HexNAc4 Pho1 + Man3 GlcNAc2	
A50 1952.677 1816.616 -7.9 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2 A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A49	1945.612	1823.565	-15.3	Hex4 HexNAc1 Su1 + Man3 GlcNAc2	
A51 1954.866 1832.601 96.3 Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2 Glyconnect A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A50	1952.677	1816.616	-7.9	HexNAc2 dHex3 Pho1 + Man3 GlcNAc2	
A52 1959.599 1823.574 -26.5 Hex4 HexNAc1 Pho1 + Man3 GlcNAc2 Glyconnect A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 Glyconnect A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A51	1954.866	1832.601	96.3	Hex1 HexNAc2 dHex2 Su1 + Man3 GlcNAc2	Glyconnect
A53 1970.726 1848.596 26.9 Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Su1 + Man3 GlcNAc2 Glyconnect A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2	A52	1959.599	1823.574	-26.5	Hex4 HexNAc1 Pho1 + Man3 GlcNAc2	Glyconnect
A54 1986.667 1864.591 -0.5 Hex3 HexNAc2 Sul + Man3 GlcNAc2 A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 2009.653 1873.638 -30.7 Hex1Ac3 dHex2 Pho1 + Man3 GlcNAc2 A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2	A53	1970.726	1848.596	26.9	Hex2 HexNAc2 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
A55 2000.577 1864.601 -50.2 Hex3 HexNAc2 Pho1 + Man3 GlcNAc2 A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2	A54	1986.667	1864.591	-0.5	Hex3 HexNAc2 Su1 + Man3 GlcNAc2	
A56 2009.653 1873.638 -30.7 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2 A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A55	2000.577	1864.601	-50.2	Hex3 HexNAc2 Pho1 + Man3 GlcNAc2	
A57 2011.663 1889.623 -18.1 Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2 Glyconnect A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2 Glyconnect	A56	2009.653	1873.638	-30.7	HexNAc3 dHex2 Pho1 + Man3 GlcNAc2	
A58 2027.682 1905.618 -6.1 Hex2 HexNAc3 Su1 + Man3 GlcNAc2	A57	2011.663	1889.623	-18.1	Hex1 HexNAc3 dHex1 Su1 + Man3 GlcNAc2	Glyconnect
	A58	2027.682	1905.618	-6.1	Hex2 HexNAc3 Su1 + Man3 GlcNAc2	

A59	2041.713	1905.627	4.3	Hex2 HexNAc3 Pho1 + Man3 GlcNAc2	
A60	2050.704	1928.596	15.2	Hex5 dHex1 Su1 + Man3 GlcNAc2	
A61	2068.719	1946.644	-1.0	Hex1 HexNAc4 Su1 + Man3 GlcNAc2	
A62	2082.738	1946.654	3.3	Hex1 HexNAc4 Pho1 + Man3 GlcNAc2	
A63	2109.758	1987.671	5.0	HexNAc5 Su1 + Man3 GlcNAc2	Glyconnect
A64	2114.753	1978.669	3.4	Hex1 HexNAc2 dHex3 Pho1 + Man3 GlcNAc2	
A65	2129.999	1993.634	135.3	Hex2 HexNAc2 NeuAc1 Su1 + Man3 GlcNAc2	Glyconnect
A66	2146.364	2010.659	-173.2	Hex3 HexNAc2 dHex1 Pho1 + Man3 GlcNAc2	
A67	2148.660	2026.644	-28.3	Hex4 HexNAc2 Su1 + Man3 GlcNAc2	
A68	2158.155	2035.681	184.1	Hex1 HexNAc3 dHex2 Su1 + Man3 GlcNAc2	Glyconnect
A69	2171.782	2035.690	6.9	Hex1 HexNAc3 dHex2 Pho1 + Man3 GlcNAc2	
A70	2189.759	2067.671	5.1	Hex3 HexNAc3 Su1 + Man3 GlcNAc2	
A71	2203.771	2067.680	6.5	Hex3 HexNAc3 Pho1 + Man3 GlcNAc2	
A72	2212.764	2090.649	17.2	Hex6 dHex1 Su1 + Man3 GlcNAc2	
A73	2230.794	2108.697	8.8	Hex2 HexNAc4 Su1 + Man3 GlcNAc2	
A74	2244.834	2108.707	22.5	Hex2 HexNAc4 Pho1 + Man3 GlcNAc2	
A75	2271.838	2149.724	16.2	Hex1 HexNAc5 Su1 + Man3 GlcNAc2	
A76	2278.900	2156.707	51.0	Hex3 HexNAc2 dHex2 Su1 + Man3 GlcNAc2	
A77	2287.809	2165.744	-5.2	HexNAc3 dHex4 Su1 + Man3 GlcNAc2	
A78	2320.103	2197.734	126.0	Hex2 HexNAc3 dHex2 Su1 + Man3 GlcNAc2	
A79	2374.818	2252.702	16.6	Hex7 dHex1 Su1 + Man3 GlcNAc2	
A80	2392.895	2270.750	28.3	Hex3 HexNAc4 Su1 + Man3 GlcNAc2	
A81	2406.937	2270.760	41.8	Hex3 HexNAc4 Pho1 + Man3 GlcNAc2	
A82	2433.956	2311.777	42.1	Hex2 HexNAc5 Su1 + Man3 GlcNAc2	
A83	2449.933	2327.797	24.4	Hex1 HexNAc3 dHex4 Su1 + Man3 GlcNAc2	
A84	2479.957	2343.801	31.9	Hex2 HexNAc3 dHex3 Pho1 + Man3 GlcNAc2	
A85	2555.030	2432.803	58.9	Hex4 HexNAc4 Su1 + Man3 GlcNAc2	
A86	2569.031	2432.812	55.4	Hex4 HexNAc4 Pho1 + Man3 GlcNAc2	
A87	2596.066	2473.829	61.6	Hex3 HexNAc5 Su1 + Man3 GlcNAc2	
A88	2758.164	2635.882	74.5	Hex4 HexNAc5 Su1 + Man3 GlcNAc2	
A89	2920.151	2797.935	47.7	Hex5 HexNAc5 Su1 + Man3 GlcNAc2	

*Monosaccharide nomenclatures are based on the SNFG: Hexose (Hex), *N*-acetyl hexosamine (HexNAc), Mannose (Man), *N*-acetyl glucosamine (GlcNAc), Fucose (dHex), Sulfate (Su), and Phosphate (Pho). The number of units corresponding to each monosaccharide are indicated after each abbreviation.

*The links to the Glyconnect database of the Swiss Institute of Bioinformatics are provided for selected monoisotopic peaks found in the database.

*From the 89 monoisotopic masses, 55 sulfated and 34 phosphorylated *N*-glycans were identified based on their glycan composition and MS/MS analysis. Fucosylated acidic *N*-glycan structures were also found in trace abundance relative to un-fucosylated acidic *N*-glycans.

*Glycoform mass is the mass of unlabeled N-glycan structure denoted as [M-BOA], BOA is benzyloxyamine with a molecular mass of 123.0684 Da.

PCA Group No.	Glycan ID	Observed mass, <i>m/z</i> [M-H] ⁻	¹ Glycan composition	Probable structures	² trans-Gal structure type
	A6	1270.431	Hex1 PMe1 + Core		trans-Gal(-)
	A22	1594.528	Hex3 PMe1 + Core		trans-Gal(-)
1	A37	1783.585	Hex3 HexNAc1 Su1 + Core		trans-Gal(+)
	A39	1797.610	Hex3 HexNAc1 PMe1 + Core		trans-Gal(+)
	A3	1135.373	Hex2 HexNAc3 Su1	s (H-0-H-H	trans-Gal(-)
	A8	1297.420	HexNAc1 Su1 + Core	s 	trans-Gal(-)
	A16	1459.475	Hex1 HexNAc1 Su1 + Core	s 0-0	trans-Gal(-)
	A18	1500.497	HexNAc2 Su1 + Core	s 8-0	trans-Gal(-)
2	A25	1621.533	Hex2 HexNAc1 Su1 + Core		trans-Gal(-)
	A28	1662.556	Hex1 HexNAc2 Su1 + Core	s {	trans-Gal(+)
	A30	1703.584	HexNac3 Su1 + Core		trans-Gal(-)
	A44	1865.620	Hex1 HexNAc3 Su1 + Core		trans-Gal(+)
	A42	1824.608	Hex2 HexNAc2 Su1 + Core	s { 0-8-0	trans-Gal(+)
	A47	1906.655	HexNAc4 Su1 + Core		trans-Gal(-)
	A58	2027.682	Hex2 HexNAc3 Su1 + Core		trans-Gal(+)
	A61	2068.719	Hex1 HexNAc4 Su1 + Core		trans-Gal(+)
3	A70	2189.759	Hex3 HexNAc3 Su1 + Core		trans-Gal(+)
	A73	2230.794	Hex2 HexNAc4 Su1 + Core		trans-Gal(+)
	A80	2392.895	Hex3 HexNAc4 Su1 + Core		trans-Gal(+)
	A85	2555.030	Hex4 HexNAc4 Su1 + Core		trans-Gal(+)

Table S3. List of acidic *N*-glycans that gave the variation between groups in PCA.

¹Monosaccharide nomenclatures are based on the SNFG: Hexose (Hex), *N*-acetyl hexosamine (HexNAc), Sulfate (Su), methylated Phosphate (PMe) and *N*-glycan core Man3GlcNAc2 (Core). The number of units corresponding to each monosaccharide are indicated after each abbreviation.

²The definition of trans-Gal(+/-) classifications were based on Hirose, et al.[1]

Sample ID	Scientific name	CO1	Cty b	ND2	Complete mtDNA
D01	Aix galericulata	JN703260	EU585604	EU585667	KF437906
D02	Anas platyrhynchos	Mk262361	EU585609	EU585672	MN720361
D03	Lophodytes cucullatus		EU585650	EU585713	
D04	Aythya americana	DQ434316	NC 000877	NC 000877	NC 000877
D05	Anas versicolor	FJ027121	AF059094	AF059154	
D06	Anser anser	GU571243	EU585613	EU585676	NC 011196
D07	Anser indicus	GU571246	EU585619	EU585682	NC_025654
D08	Dendrocygna eytoni	MZ153330	EU585647	EU585710	
D09	Tadorna radjah		EU585665	EU585728	
D10	Sarkidiornis melanotos	FJ028237	EU585660	EU585723	
D11	Anseranas semipalmata	MN356217	NC_005933		MN356217
D12	Aix sponsa	AY666569	EU585605	EU585668	
D13	Alopochen aegyptiaca	Mf580159	EU585606	EU585669	
D14	Anas platyrhynchos domesticus				
D15	Anser anser domesticus (America)				
D16	Anser anser domesticus (France)				
D17	Anser anser domesticus (Germany)				
D18	Anser canagica	DQ432849	EU585615	EU585678	
D19	Anser cygnoides domesticus	LC145060	EU585616	EU585679	NC_023832
D20	Anser cygnoides domesticus				
D21	Anser cygnoides domesticus				
D22	Anser erythropus	GU571729	EU161871	EU585680	
D23	Callonetta leucophrys	FJ027277	EU914157	AF059157	
D24	Dendrocygna arborea				
D25	Lophonetta speculariodes	JN801488	AF059102	AF059162	
D26	Netta rufina	GQ482234	EU585657	EU585720	NC 024922
D27	Oxyura jamaicensis	AY666448	EU585658	EU585721	MW574354
D28	Chloephaga picta	FJ027353	AF515262	AF515266	
D29	Branta leucopsis	GU571283	EU585630	EU585693	
D30	Branta sandvicensis	JF498832	EU585632	EU585695	
D31	Anas gibberifrons	JQ174015	AF059076	AF059136	
D32	Anas laysanensis	JF498830	AF059078	AF059138	
D33	Anas luzonica	KT151721	AF059079	AF059139	
D34	Anas rubripes	AY666211	AF059088	AF059148	
D35	Anas clypeata	GU571236	AF059062	AF059122	NC_028346
D36	Oxyura vittata	JQ175648	EU585659	EU585722	
D37	Anas melleri		AF059080	AF059140	
D38	Oxyura australis	GU1551000	AF119167	AY747867	210 00 00 00 00 00 00 00 00 00 00 00 00 0
D39	Branta canadensis	GU571280	EU585629	EU585692	NC_007011
D40	Dendrocygna viduata	FJ027502	EU585649	EU585712	
D41	Anser brachyrhynchus	GU571244	EU585614	EU585677	NG 050005
D42	Chauna torquata	AY140/30	AY2/4030	AY274053	NC 052807
D43	Thalassornis leuconotos	097738		EU202700	
D44	Tadorna tadornoides	D 1001426	EU585666	EU585729	
D45	Chenonetta jubata	JN801436	AF059100	AF059160	100000
D46	Somateria mollissima	GU5/1620	EU585661	EU585/24	MW849292
D47	Anser albifrons	DQ433314	EU585612	EU585675	NC_004539
D48	Mergus serrator	GU571482	EU585655	EU585718	MZ365040
D49	Ayinya affinis	DQ434308	EU585621	EU383684	
D30	Denarocygna autumnalis	FJ02/495	EU505(20	EU505701	MW/040070
D51	Clangula hyemalis	GUS/1339	EU585638	EU585701	MW849278
D52	Anas discors	AY666325	EU914146	AF059128	
D33	Oxyura punctata	CO491227	EU574701	A E0501(0	NC 045272
D54	Anas strepera (Mareca strepera)	GQ481327	EU5/4791	AF059169	NC_045373
D22	Heteronetta atricapilla	FJU2/649	1	1	1

Table S4. GenBank accession numbers for various genes of the 72 Anseriformes species in this study.

D56	Anas superciliosa	JN801396	AF059092	AF059152	
D57	Anser caerulescens	DQ434537	FJ423758		
D58	Aythya fuligula	JF499099	KU697802	EU585687	NC_024595
D59	Aythya ferina	JF499098	EU585623	EU585686	NC_024602
D60	Anas formosa	JN703250	AF059073	AF059133	NC_015482
D61	Dendrocygna bicolor		EU585646	EU585709	
D62	Anas querquedula	GQ481326	EU585610	EU585673	
D63	Malacorhynchus membranaceus		EU585651	EU585714	
D64	Anas hottentota (Anas punctata)		EU585608	EU585671	
D65	Anas georgica	FJ027096	AF059075	AF059135	
D66	Biziura lobata		EU585627	EU585690	
D68	Cygnus atratus	NC_012843	EU585641	EU585704	NC_012843
D67	Aythya australis	MW151626	EU585622	EU585685	
D69	Amazonetta brasiliensis	FJ027059	AF059054	AF059115	
D70	Lophonetta cristata				
D71	Anas crecca	KC771255	AF059064	EU585670	NC 022452
D72	Tadorna tadorna	KU140668	AF059113	AF059173	NC 024750
OG1	Gallus gallus		AF195631		NC_040902
OG2	Struthio camelus	LC145063	MZ545713		NC 002785

*Accession numbers of the mitochondrial gene sequences of the cytochrome b (Cty b), cytochrome oxidase subunit 1 (CO1), NADH dehydrogenase subunit 2 (ND2) and the complete mitochondrial DNA (mtDNA) was taken from GenBank.

Sample	Success	Sub-family	PCA	VP	VP
ID	Species	Classification	Group	Values	Classification
D2	Anas platyrhynchos	Anatinae	1	12.9	HVP
D56	Anas superciliosa	Anatinae	2	5.7	HVP
D34	Anas rubripes	Anatinae	2	18.1	HVP
D71	Anas creeca	Anatinae	2	4.0	LVP
D31	Anas gibberifrons	Anatinae	2	5.8	HVP
D54	Anas strepera	Anatinae	2	1.5	LVP
D52	Anas discors	Anatinae	1	11.2	HVP
D45	Chenonetta jubata	Anatinae	2	2.0	LVP
D12	Aix sponsa	Anatinae	2	2.2	LVP
D68	Aythya australis	Anatinae	2	2.8	LVP
D72	Tadorna tadorna	Anatinae	2	6.5	HVP
D44	Tadorna tadornoides	Anatinae	2	5.0	LVP
D63	M. Membranaceus	Anatinae	1	6.3	HVP
D39	Branta canadensis	Anserinae	3	0.8	LVP
D47	Anser albifrons	Anserinae	2	2.2	LVP
D06	Anser anser	Anserinae	3	1.1	LVP

Table S5. Waterfowl classification based on their virus prevalence (VP).

*Each waterfowl species was classified either as a high virus prevalence (HVP) or low virus prevalence (LVP). Classification was based on the average virus prevalence (5.5%). LVP < 5.50% < HVP. *Virus prevalence data of the 16 species shown on the table was taken from the work of Wille M *et al.* [2]

*Virus prevalence data of the 16 species shown on the table was taken from the work of Wille, M. *et al.* [2] and Olsen, B. *et al.* [3].



distances estimated using the Tamura-Nei model, and then selecting the topology with superior log likelihood value. A discrete Gamma distribution was used to Figure S1. The evolutionary history was inferred by using the Maximum Likelihood method and Tamura-Nei model. The tree with the highest log likelihood (-1550.63) is shown. Initial tree(s) for the heuristic search were obtained automatically by applying Neighbor-Join and BioNJ algorithms to a matrix of pairwise model evolutionary rate differences among sites (5 categories (+G, parameter = 0.4430)). The rate variation model allowed for some sites to be evolutionarily invariable ([+/], 27.02% sites). The tree is drawn to scale, with branch lengths measured in the number of substitutions per site. This analysis involved 62 nucleotide sequences. There were a total of 992 positions in the final dataset. Evolutionary analyses were conducted in MEGA11.



obtained automatically by applying Neighbor-Join and BioNJ algorithms to a matrix of pairwise distances estimated using the Tamura-Nei model, and then selecting Figure S2. The evolutionary history was inferred by using the Maximum Likelihood method and Tamura-Nei model. The tree with the highest log likelihood (-5786.80) is shown. The percentage of trees in which the associated taxa clustered together is shown below the branches. Initial tree(s) for the heuristic search were the topology with superior log likelihood value. A discrete Gamma distribution was used to model evolutionary rate differences among sites (5 categories (+G, parameter = 0.3642)). The tree is drawn to scale, with branch lengths measured in the number of substitutions per site. This analysis involved 18 nucleotide sequences. There were a total of 1082 positions in the final dataset. Evolutionary analyses were conducted in MEGA11.

References

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- [2] Wille, M., Lisovski, S., Roshier, D., Ferenczi, M., et al., Strong host phylogenetic and ecological effects on host competency for avian influenza in Australian wild birds. *Proceedings of the Royal Society B: Biological Sciences* 2023, 290, 1–9.
- [3] Olsen, B., Munster, V.J., Wallensten, A., Waldenström, J., et al., Global Patterns of Influenza A Virus in Wild Birds. *Science (1979)* 2006, 312, 384–388.