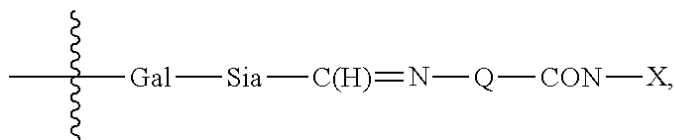


CLAIMS

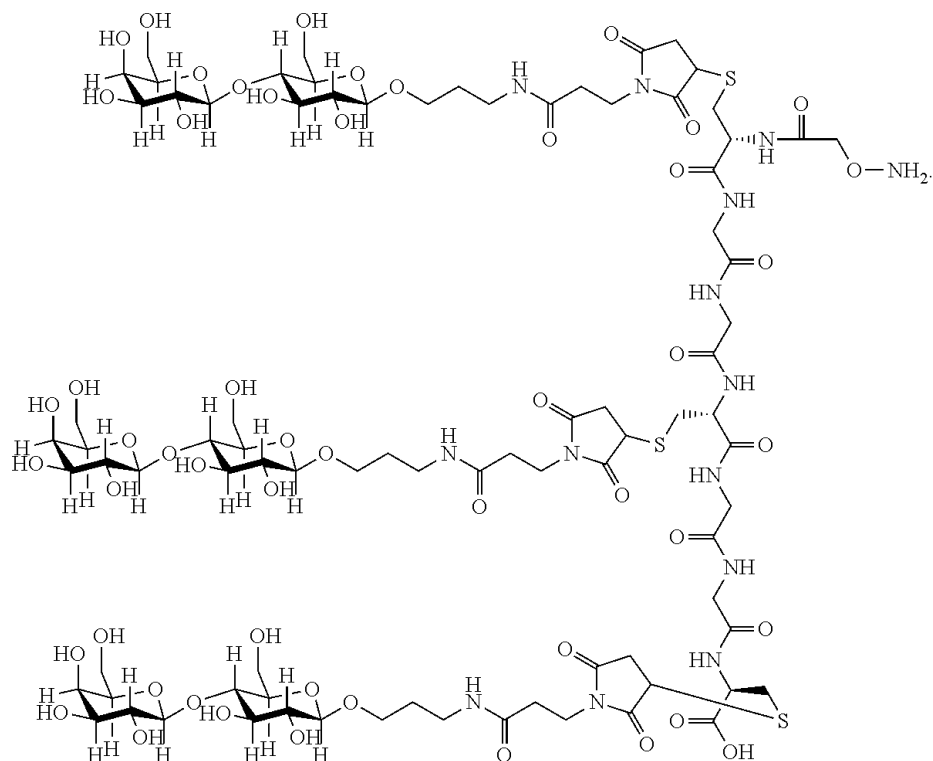
1. An antibody, or antigen-binding fragment thereof, comprising at least one modified glycan, wherein the glycan comprises at least one moiety of Formula (IV):

Formula (IV)

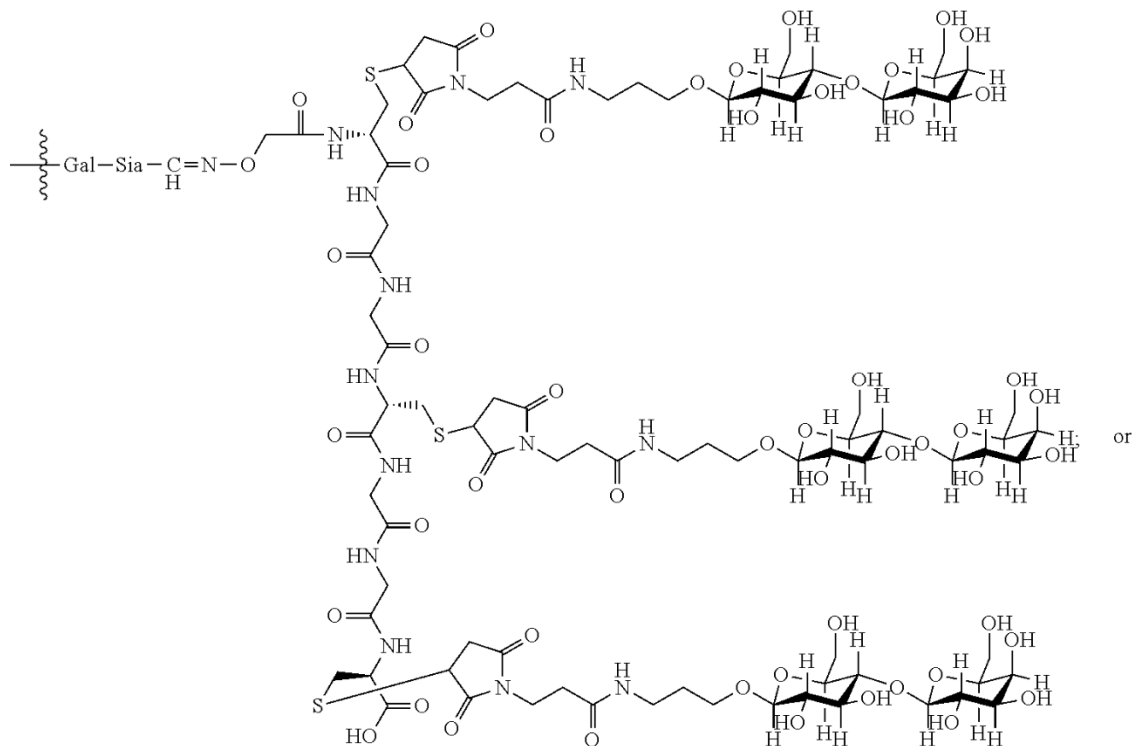


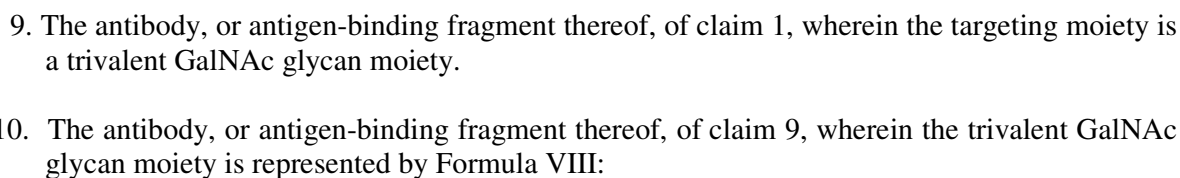
wherein:

- A) Q is NH or O;
 - B) CON is a connector moiety;
 - C) X is a targeting moiety comprising a carbohydrate or a glycopeptide that binds to a carbohydrate receptor on a cell or a glycopeptide receptor on a cell;
 - D) Gal is a galactose moiety; and
 - E) Sia is a sialic acid moiety.
2. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the cell is a mammalian cell.
 3. The antibody, or antigen-binding fragment thereof, of claim 2, wherein the mammalian cell is selected from an immune cell, a liver cell, a tumor cell, a vascular cell, an epithelial cell, or a mesenchymal cell.
 4. The antibody, or antigen-binding fragment thereof, of claim 2, wherein the mammalian cell is selected from a B cell, a T cell, a dendritic cell, a natural killer (NK) cell, a macrophage, a neutrophil, a hepatocyte, a liver sinusoidal endothelial cell, or a hepatoma cell.
 5. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety comprises an α 2,3-sialyllactose moiety or an α 2,6-sialyllactose moiety.
 6. The antibody, or antigen-binding fragment thereof, of claim 3, wherein the targeting moiety is a tri-galactosylated glycopeptide or lactose₃-Cys₃Gly₄.
 7. The antibody, or antigen-binding fragment thereof, of claim 6, wherein the lactose₃-Cys₃Gly₄ moiety is represented by Formula V:



8. The antibody, or antigen-binding fragment thereof, of claim 7, comprising at least one moiety selected from the following structural formulae:

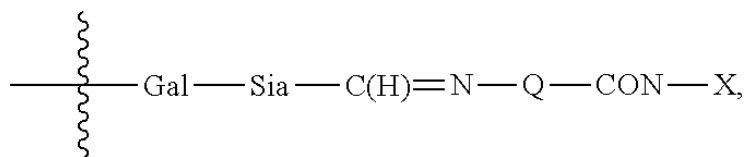


[illegible]

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11. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the antibody, or antigen-binding fragment thereof, comprises an Fc domain.
12. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the modified glycan is N-linked to the antibody, or antigen-binding fragment thereof, via an asparagine residue at amino acid position 297 of the Fc domain, according to EU numbering.
13. A composition comprising the antibody, or antigen-binding fragment thereof, of claim 1 and a pharmaceutically acceptable carrier or excipient.
14. The composition of claim 13, wherein the ratio of targeting moiety to antibody, or antigen-binding fragment thereof, is equal to or more than about 4.
15. The composition of claim 13, wherein the ratio of targeting moiety to antibody, or antigen-binding fragment thereof, is at least about 2.
16. An antibody, or antigen-binding fragment thereof, comprising at least one modified glycan comprising at least one moiety of Formula (IV):

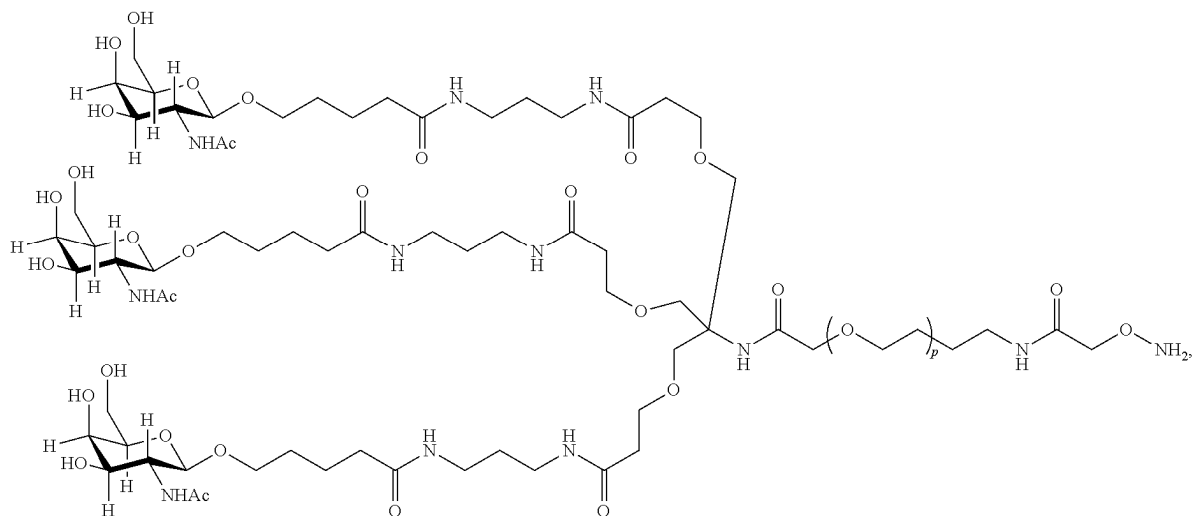
Formula (IV)



wherein:

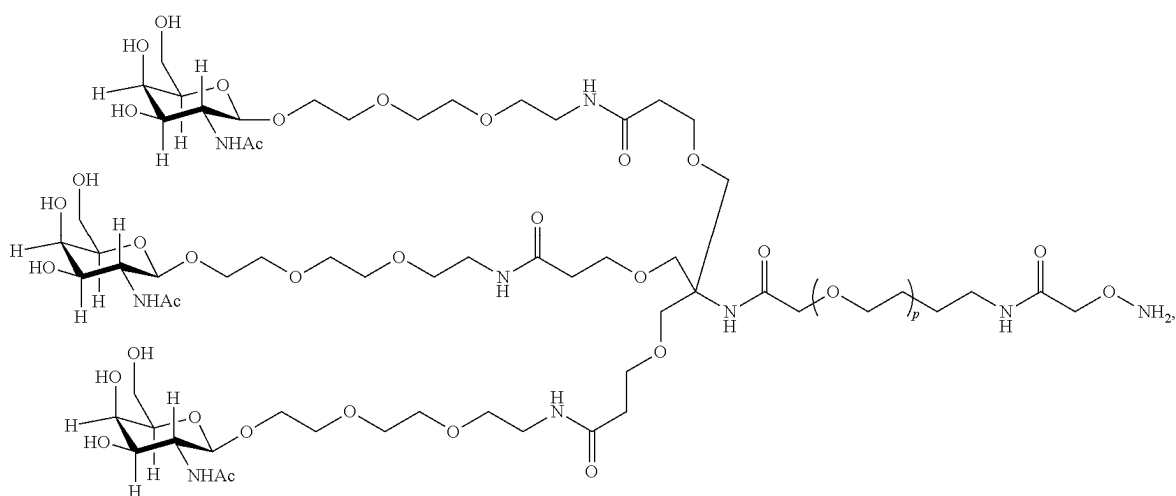
- A) Q is NH or O;
- B) CON is a connector moiety;
- C) X is a targeting moiety comprising PEG that binds to a cell;
- D) Gal is a galactose moiety; and
- E) Sia is a sialic acid moiety.
17. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the glycan comprises at least one moiety represented by Formula IX or Formula XI:

[Formula IX]



wherein p has a value of 1 to 32; or

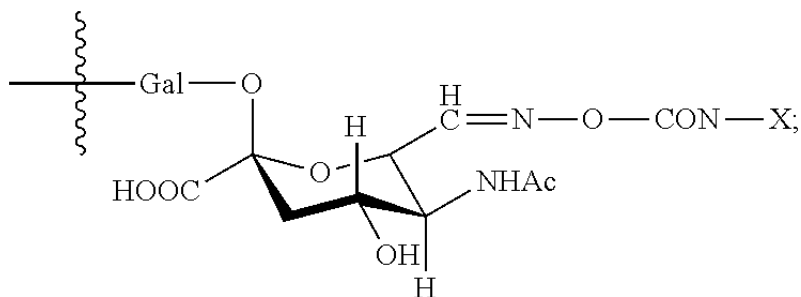
[Formula XI]



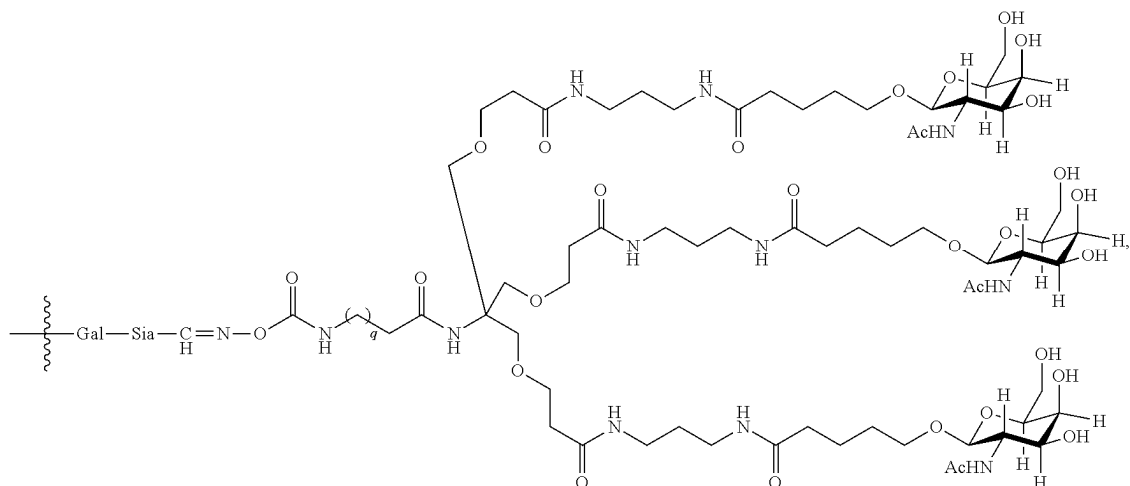
wherein p has a value of 1 to 32.

18. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the PEG comprises 3 to 3.5 PEG.
19. The antibody, or antigen-binding fragment thereof, of claim 1, wherein targeting moiety binds to a mannose 6 phosphate receptor on the cell.
20. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety binds to a sialic acid-binding immunoglobulin-type lectin (Siglec) on the cell.
21. The antibody, or antigen-binding fragment thereof, of claim 20, wherein the Siglec is sialoadhesin (Siglec-1), CD22 (Siglec-2), CD33 (Siglec-3), myelin-associated glycoprotein (MAG (Siglec-4)), Siglec-5, Siglec-6, Siglec-7, Siglec-8, Siglec-9, Siglec-10, Siglec-11, Siglec-12, Siglec-14, or Siglec-15.

22. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety binds to a C-type lectin receptor, a galectin, or a L-type lectin receptor.
23. The antibody, or antigen-binding fragment thereof, of claim 1, wherein Q is O.
24. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the glycan comprises a moiety of the following structural formula:

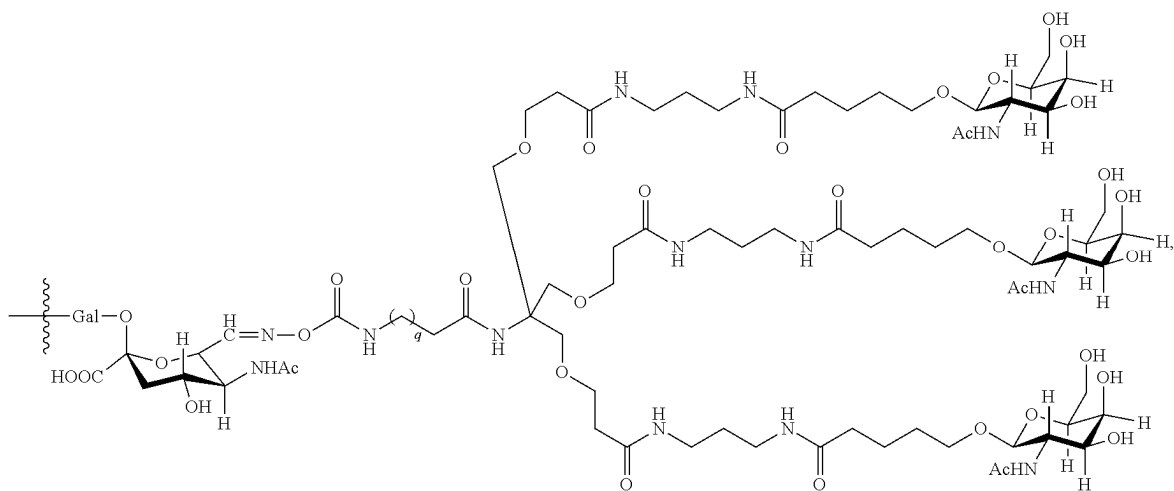


25. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety is a glycopeptide capable of binding an asialoglycoprotein receptor (ASGPR) on a cell.
26. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the amount of the antibody, or antigen-binding fragment thereof, internalized by the cell is greater than the amount of a reference antibody, or antigen-binding fragment thereof, lacking a targeting moiety internalized by the cell.
27. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety binds to DEC-205 (CD205; lymphocyte antigen 75), macrophage mannose receptor (MMR; CD206), Dectin-1, Dectin-2, macrophage-inducible C-type lectin (Mincle), dendritic cell-specific ICAM3-grabbing nonintegrin (DC-SIGN, CD209), DC NK lectin group receptor-1 (DNGR-1), Langerin (CD207), a lectican, an asialoglycoprotein receptor (ASGPR), C-lectin receptor dendritic cell immunoreceptor (CLEC4A; CLECSF6; DCIR), macrophage galactose-type lectin (MGL), a DC receptor, a collectin, a selectin, an NK-cell receptor, a multi-C-type lectin domain (CTLD) endocytic receptor, a Reg group (type VII) lectin, chondrolectin, tetranectin, polycystin, attractin (ATRIN), eosinophil major basic protein (EMBP), DiGeorge Syndrome Critical Region Gene 2 (DGCR2), Thrombomodulin, Bimlec, a group XVI lectin (SEEC), or a group XVII lectin (CBCP/Frem1/QBRICK).
28. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the targeting moiety is a trivalent GalNAc glycan moiety.
29. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the antibody, or antigen-binding fragment thereof, comprises a CH1 domain.
30. The antibody, or antigen-binding fragment thereof, of claim 1, wherein the connector moiety comprises a pH-sensitive linker, disulfide linker, enzyme-sensitive linker or other cleavable linker moiety.
31. The antibody, or antigen-binding fragment thereof, of claim 9, wherein the antibody, or antigen-binding fragment thereof, comprises at least one moiety having the following structural formula:



wherein q is an integer between 1 and 29 inclusive.

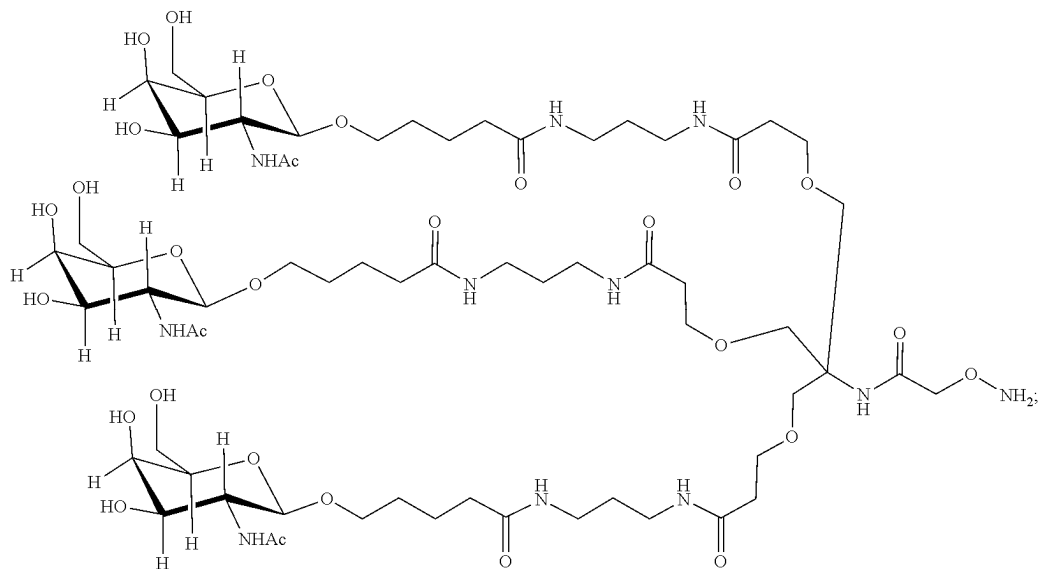
32. The antibody, or antigen-binding fragment thereof, of claim 9, wherein the antibody, or antigen-binding fragment thereof, comprises at least one moiety having the following structural formula:



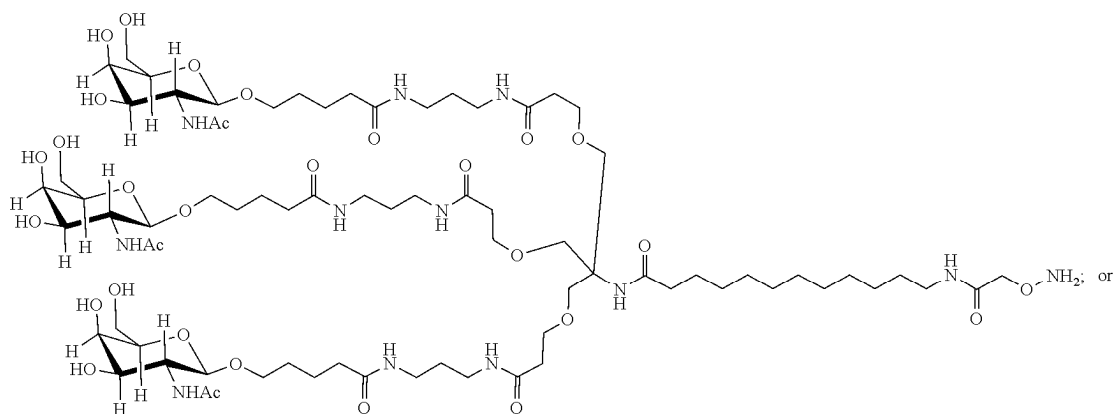
wherein q is an integer between 1 and 29 inclusive.

33. The antibody, or antigen-binding fragment thereof, of claim 9, wherein the trivalent GalNAc glycan moiety is represented by Formula VII, Formula XIII, or Formula XIV:

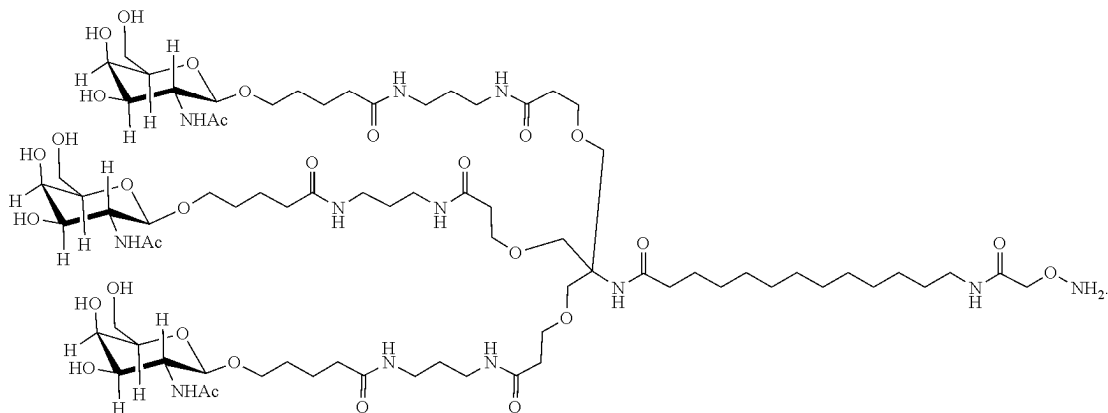
[Formula VII]



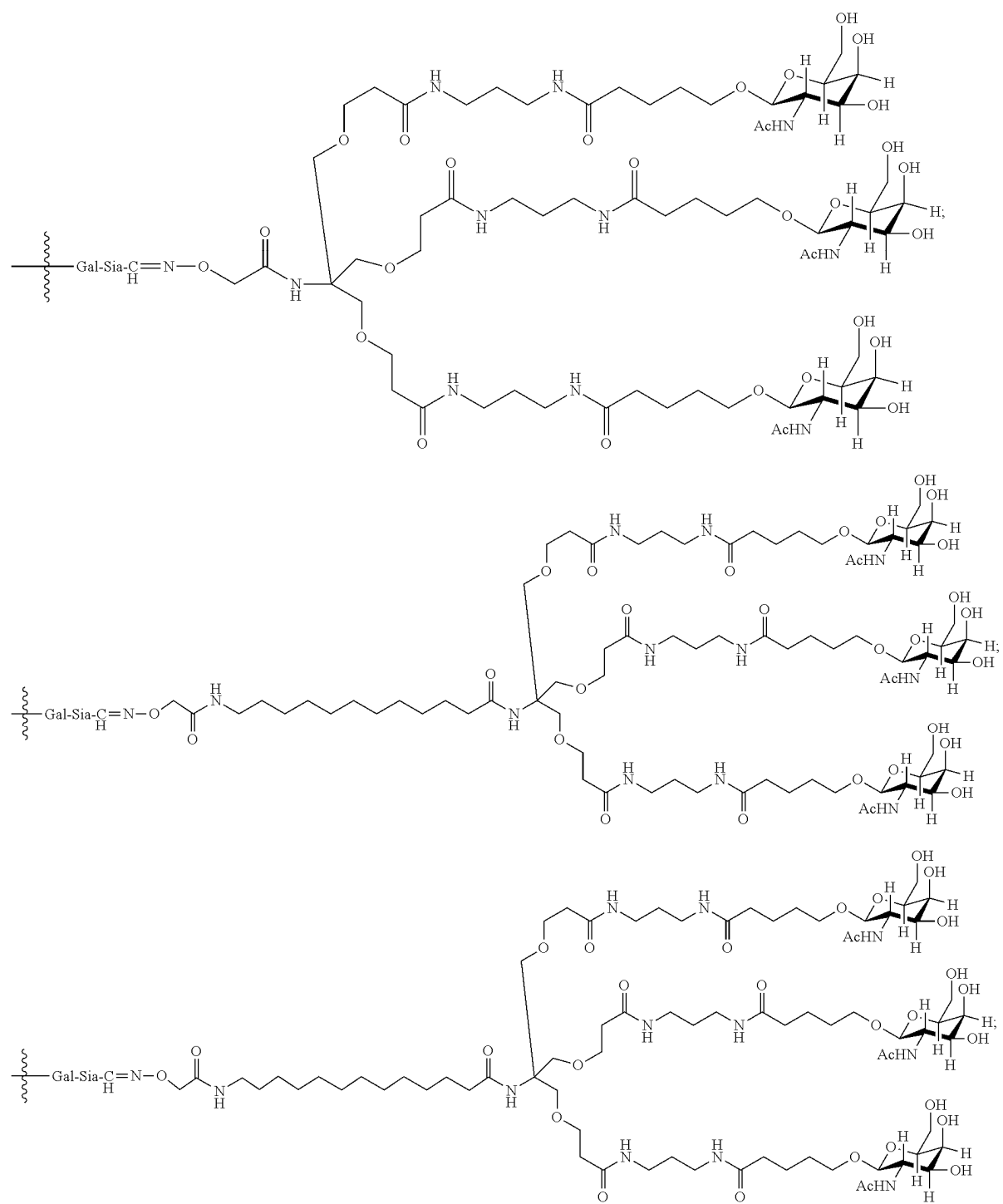
[Formula XIII]

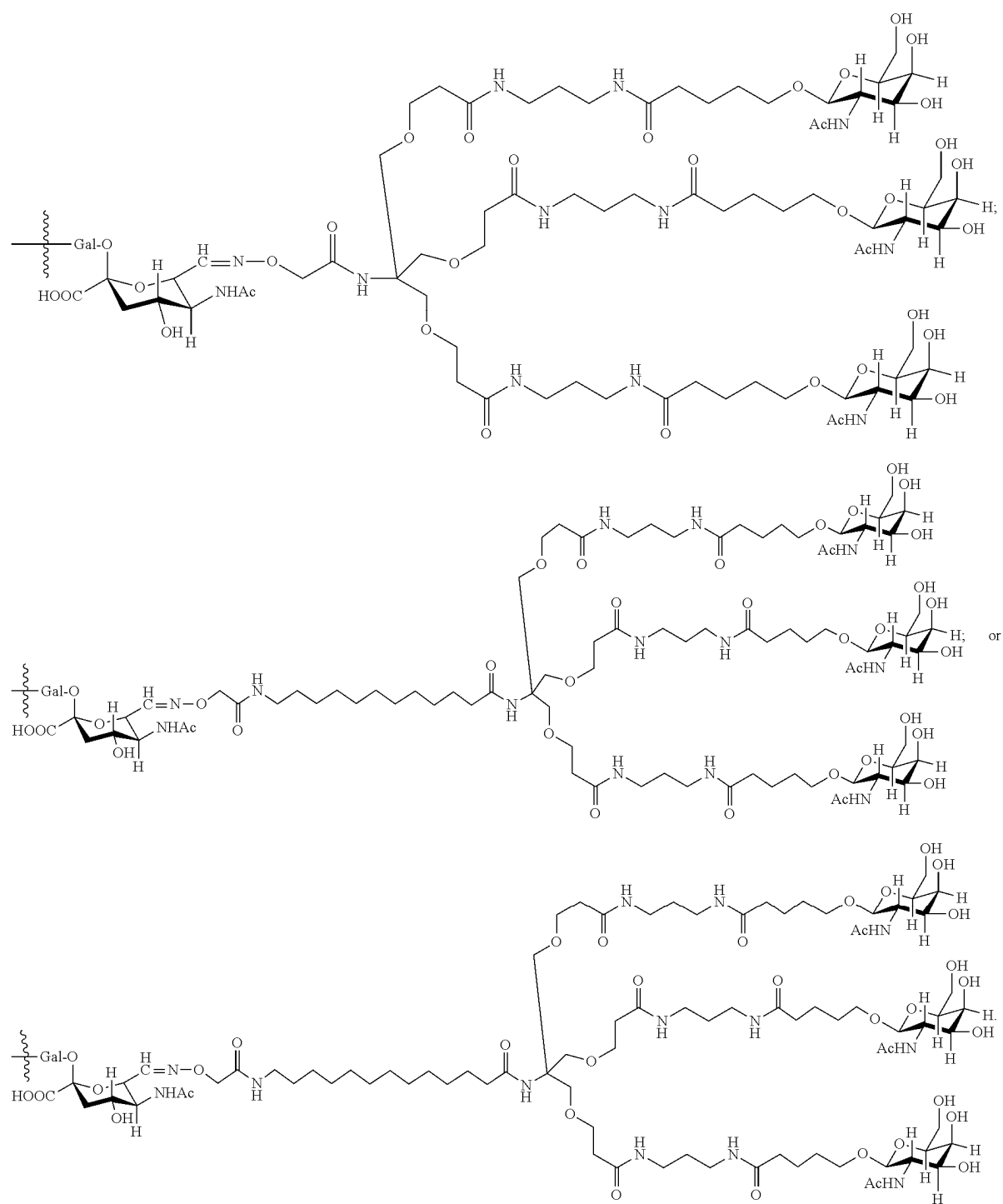


[Formula XIV]

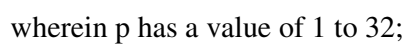
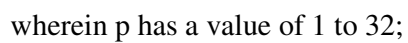
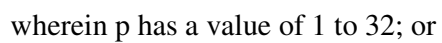


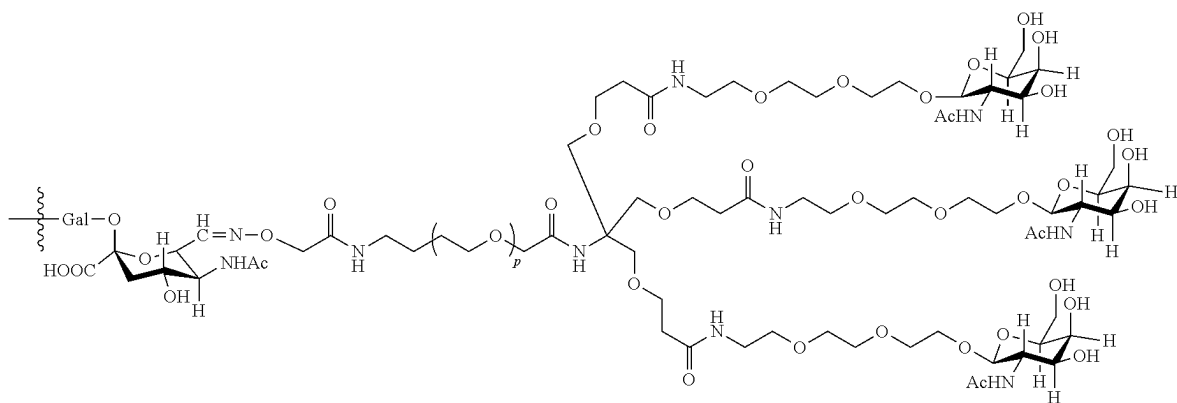
34. The antibody, or antigen-binding fragment thereof, of claim 9, wherein the antibody, or antigen-binding fragment thereof, comprises at least one moiety selected from the following structural formulae:





35. The antibody, or antigen-binding fragment thereof, of claim 9, wherein the component comprising galactose residue is GalNAc.
36. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the antibody, or antigen-binding fragment thereof, comprises at least one moiety selected from the following structural formulae:

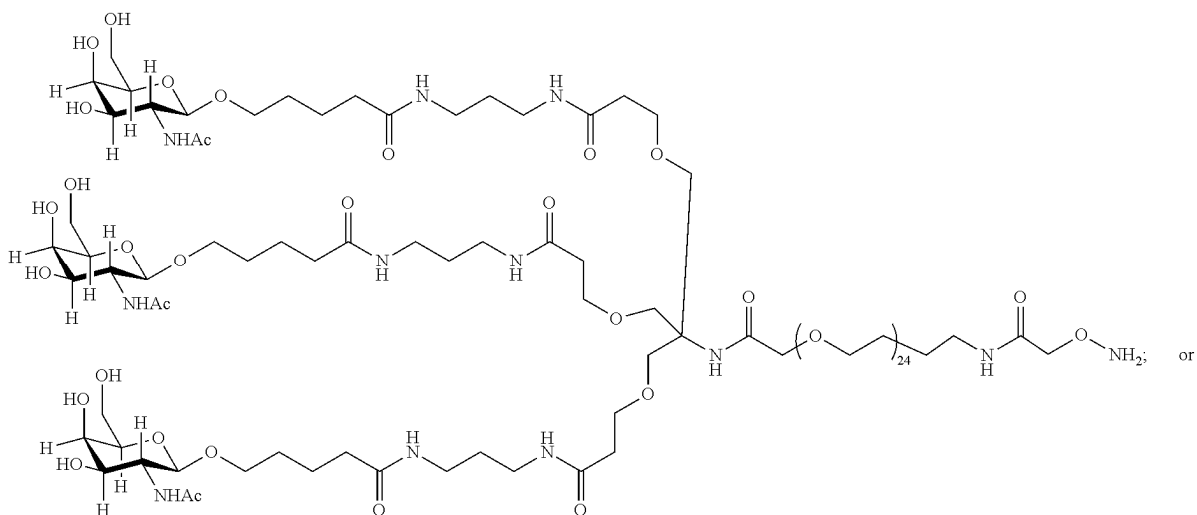




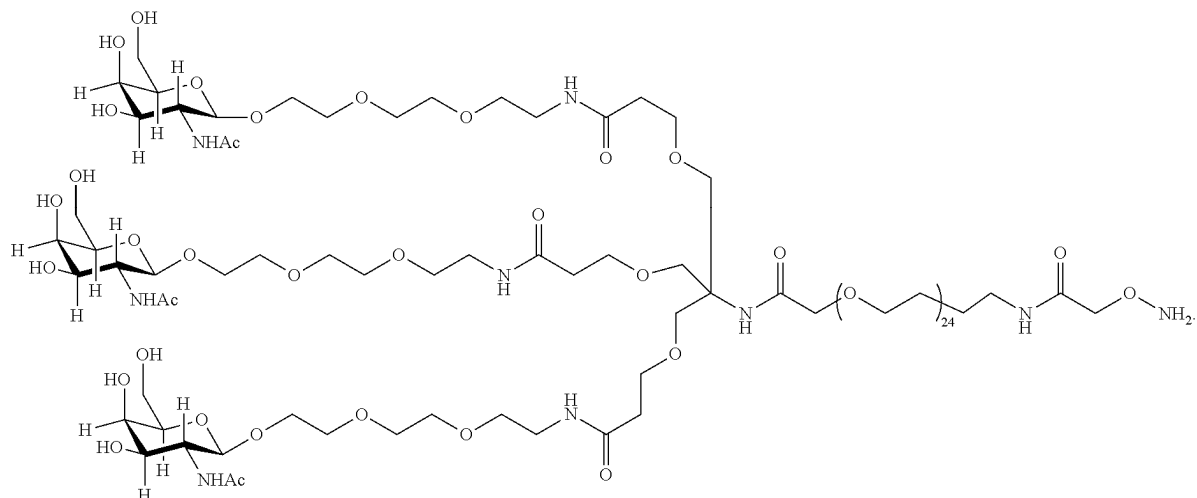
wherein p has a value of 1 to 32.

37. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the targeting moiety comprises PEG and is represented by Formula X or Formula XII:

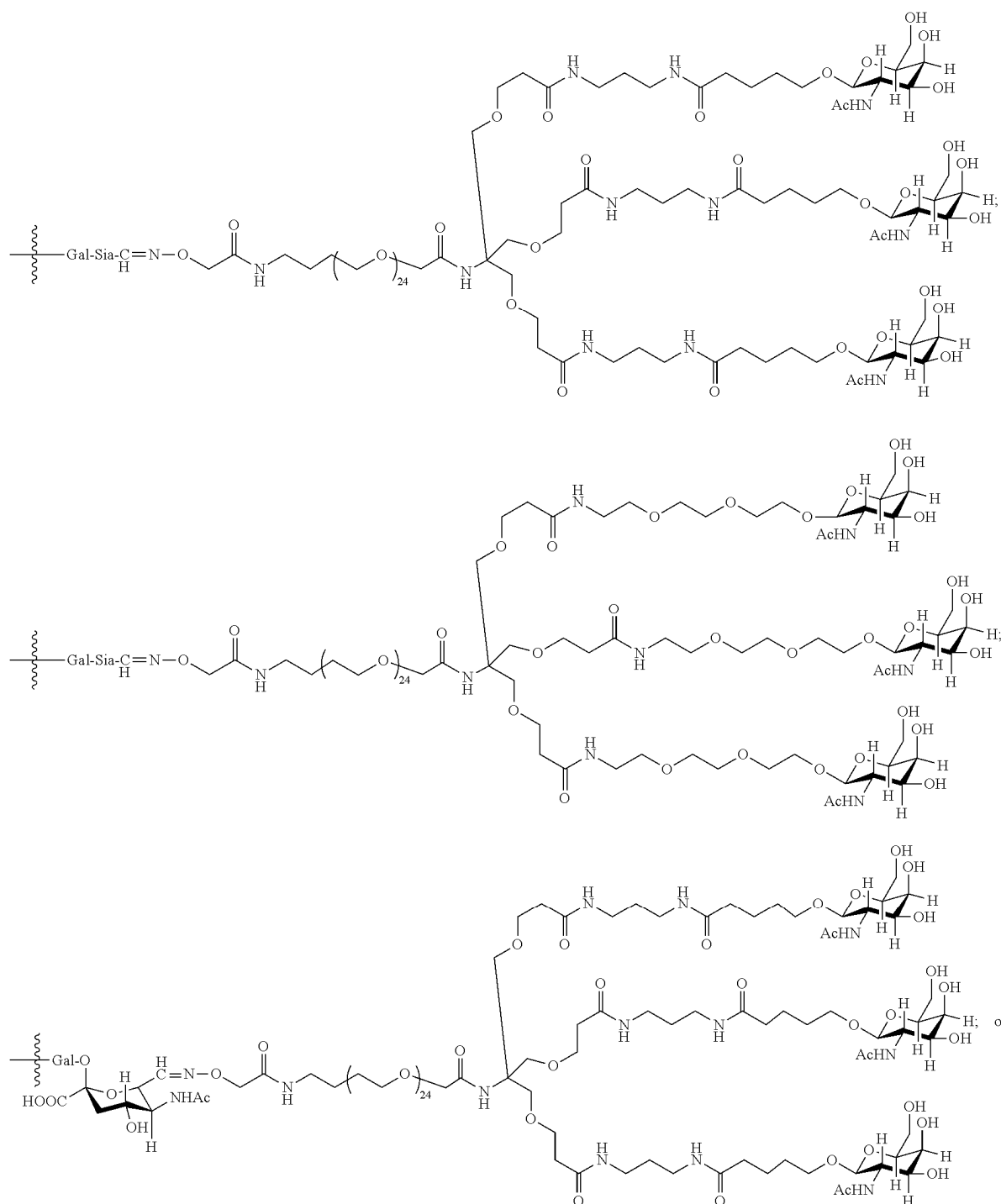
[Formula X]

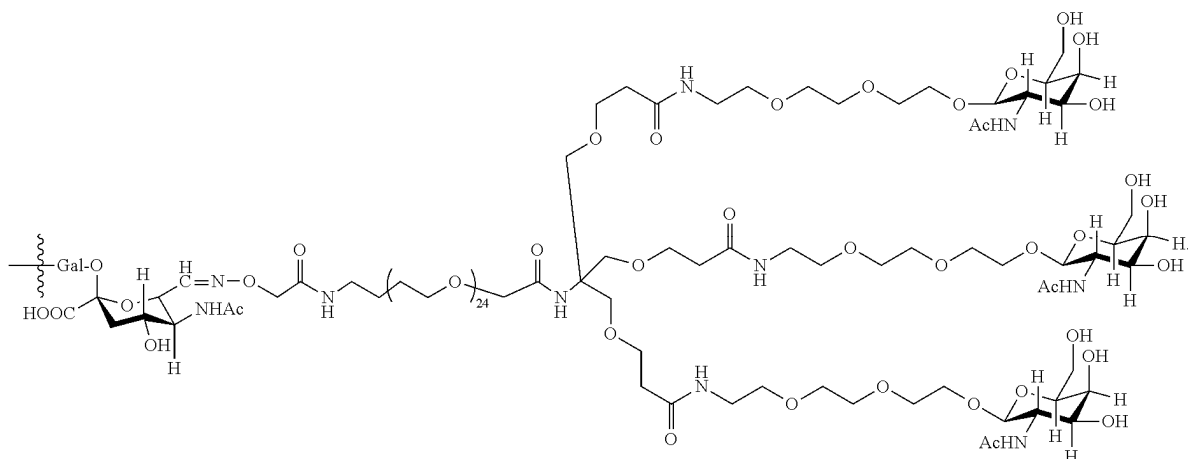


[Formula XII]



38. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the antibody, or antigen-binding fragment thereof, comprises at least one moiety selected from the following structural formulae:





39. The antibody, or antigen-binding fragment thereof, of claim 16, wherein the component comprising galactose is GalNAc.