Claims

What is claimed is:

1. A composition comprising a plurality of Globo H moieties covalently linked to one to twenty (n=1 to 20) keyhole limpet hemocyanin (KLH) moiety(ies), wherein the Globo H moieties are covalently bound to the KLH mioeties on one or more amino acid residues.
2. The composition of claim 1, wherein the amino acid residues are basic, neutral, hydrophobic amino acid residues and/or a combination thereof.
3. The composition of claim 1, wherein the amino acid residues are lysine, arginine, histidine, asparagine, proline, glutamine and/or a combination thereof.
4. The composition of claim 1, wherein the KLH moiety is a monomer (n=1).
5. The composition of claim 1, wherein the KLH moiety is a dimer (n=2).
6. The composition of claim 1, wherein the KLH moiety is a trimer (n=3).
7. The composition of claim 1, wherein the KLH moiety is a tetramer (n=4).
8. The composition of claim 1, wherein the KLH moiety is a pentamer (n=5).
9. The composition of claim 1, wherein the KLH moiety is a hexamer (n=6).
10. The composition of claim 1, wherein the KLH moiety is a heptamer (n=7).
11. The composition of claim 1, wherein the KLH moiety is an octamer (n=8).
12. The composition of claim 1, wherein the KLH moiety is a nonamer (n=9).
13. The composition of claim 1, wherein the KLH moiety is a decamer (n=10).
14. The composition of claim 1, wherein the KLH moiety is an undecamer (n=11).
15. The composition of claim 1, wherein the KLH moiety is a dodecamer (n=12).
16. The composition of claim 1, wherein the KLH moiety is a tridecamer (n=13).
17. The composition of claim 1, wherein the KLH moiety is a tetradecamer (n=14).
18. The composition of claim 1, wherein the KLH moiety is a pentadecamer (n=15).
19. The composition of claim 1, wherein the KLH moiety is a hexadecamer (n=16).
20. The composition of claim 1, wherein the KLH moiety is a heptadecamer (n=17).
21. The composition of claim 1, wherein the KLH moiety is an octadecamer (n=18).
22. The composition of claim 1, wherein the KLH moiety is a nonadecamer (n=19).
23. The composition of claim 1, wherein the KLH moiety is a didocamer (n=20).
24. The composition of claims 1, wherein the KLH moieties are the same.
25. The composition of claims 1, wherein the KLH moieties are different.

26. The composition of claim 1, wherein each KLH moiety has the same number of Globo H moieties.
27. The composition of claim 1, wherein each KLH moiety has a different number of Globo H moieties.
28. The composition of claim 1, wherein the Globo H moiety comprises (Fucα1→2 Galβ1 →3 GalNAcβ1→3 Galα1→4 Galβ1→4 Glc).
29. The composition of claim 1, wherein the KLH moiety subunit is of SEQ ID NO. 1.
30. The composition of claim 1, wherein the KLH moiety subunit is at least 95% identical to a corresponding KLH moiety of SEQ ID NO. 1.
31. The composition of claim 1, wherein the KLH moiety subunit is at least 90% identical to a corresponding KLH moiety of SEQ ID NO. 1.
32. The composition of claim 1, wherein the KLH moiety subunit is at least 80% identical to a corresponding KLH moiety of SEQ ID NO. 1.
33. The composition of claim 1, wherein the KLH moiety subunit is of SEQ ID NO. 2.
34. The composition of claim 1, wherein the KLH moiety subunit is at least 95% identical to a corresponding KLH moiety of SEQ ID NO. 2.
35. The composition of claim 1, wherein the KLH moiety subunit is at least 90% identical to a corresponding KLH moiety of SEQ ID NO. 2.
36. The composition of claim 1, wherein the KLH moiety subunit is at least 80% identical to a corresponding KLH moiety of SEQ ID NO. 2.
37. The composition of claim 1, wherein the Globo H moiety covalently linked to a keyhole limpet hemocyanin (KLH) moiety subunit is linked by a 4-(4-N-maleimidomethyl) cyclohexane-1-carboxyl hydrazide (MMCCH) linkage.
38. The isolated therapeutic conjugate of claim 1 having an epitope ratio of at least 150:1.
39. The composition of claim 1 having an epitope ratio of at least 125:1.
40. The isolated therapeutic conjugate of claim 1 having an epitope ratio of at least or about 100:1.
41. The composition of claim 1 having an epitope ratio of at least 75:1.
42. The composition of claim 1 having an epitope ratio of at least 50:1.
43. The composition of claim 1 having an epitope ratio of at least 25:1
44. The composition of claim 1 having an epitope ratio of at least 10:1.
45. The composition of claim 1 having an epitope ratio of at least 1:1.

46. Use of the composition of claim 1 in the manufacture of a medicament for the treatment of cancer.

47. The use of claim 46, wherein the cancer is breast cancer, lung cancer, gastric cancer, colon cancer, pancreatic cancer, prostate cancer, ovarian cancer, epithelial cancer or endometrial cancer.

48. The use of claim 46, wherein the cancer is a Globo H expressing cancer.

49. Use of the composition of claim 1 in the manufacture of a medicament for inducing antibodies in a subject for the purpose of creating monoclonal antibodies for therapeutic or diagnostic uses.

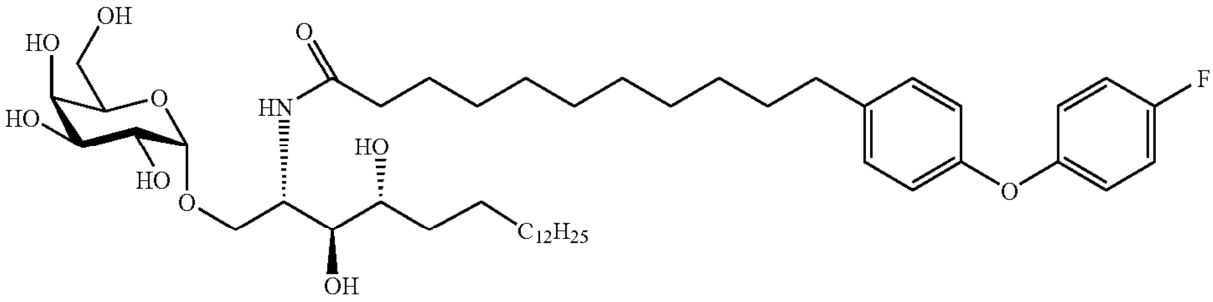
50. The use of claim 49, wherein the subject is an animal or human.

51. A pharmaceutical composition comprising

(a) a plurality of Globo H moieties covalently linked to one or more KLH moiety subunit; and

(b) an α-galactosyl-ceramide (α-GalCer) adjuvant.

52. The composition of claim 51, wherein the α-GalCer adjuvant has the following structure:



53. The composition of claim 51, wherein the KLH moieties can form a monomer, dimer, trimer, tetramer, pentamer, hexamer, hexamer, heptamer, octamer, nonamer, decamer, undecamer, dodecamer, tridecamer, tetradecamer, pentadecamer, hexadecamer, heptadecamer, octadecamer, nonadecamer or didocamer

54. Use of the composition of claim 51 in the manufacture of a medicament for inducing antibodies in a subject for the purpose of creating monoclonal antibodies for therapeutic or diagnostic uses.

55. The use of claim 54, wherein the subject is an animal or human.