

μg of carbohydrate equivalent per kg body weight. In the present experiment, liposomes are tested in a range of about 10-400 μg of carbohydrate equivalent per kg body weight per administration, or an equal number of control liposomes.

[0277] Other established animal models are implemented in the testing of liposomes for the treatment of additional clinical conditions of interest applying the methods and strategies discussed above.

[0278] All publications and patents mentioned in the above specification are herein incorporated by reference. Various modifications and variations of the described method and system of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention. Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the described modes for carrying out the invention which are obvious to those skilled in pharmacology, chemistry, biochemistry, and molecular biology or related fields are intended to be within the scope of the following claims.

We claim:

1. Compositions comprising lipid assemblies, wherein said lipid assemblies comprise:

- a) a plurality of lipid monomers;
- b) one or more surface exposed oxyacid groups; and
- c) one or more surface exposed carbohydrates;

wherein said lipid assemblies are capable of inhibiting the binding between a first cell having a receptor and a second cell having a ligand for said receptor.

2. The compositions of claim 1, wherein said surface exposed oxyacid group is selected from the group consisting of carboxyl groups and groups of the form $(\text{XO}_n)(\text{O}^-)_p$ where $n+p>2$ and X is an atom capable of binding three or more oxygen atoms.

3. The compositions of claim 2, wherein said groups of the form $(\text{XO}_n)(\text{O}^-)_p$ where $n+p>2$ comprise groups where X is selected from the group consisting of sulphur and phosphorus.

4. The compositions of claim 1, wherein said surface exposed oxyacid group is covalently attached to said lipid monomers.

5. The compositions of claim 1, wherein said surface exposed carbohydrates comprise neutral carbohydrates.

6. The compositions of claim 1, wherein said surface exposed carbohydrates comprise neutral carbohydrates selected from the group consisting of maltose and lactose.

7. The compositions of claim 1, wherein said surface exposed carbohydrates are covalently attached to said lipid monomers.

8. The compositions of claim 1, wherein said receptor comprises a selectin.

9. The compositions of claim 7, wherein said selectin is selected from the group consisting of P-selectin, L-selectin, and E-selectin.

10. The compositions of claim 1, wherein said receptor is selected from the group consisting of lectins, heparin, heparan sulfate, gangliosides, glycans, glycoproteins, and glycolipids.

11. Compositions comprising one or more polymerized lipid assemblies, wherein said polymerized lipid assemblies comprise:

- a) a plurality of lipid monomers; and
- b) one or more surface exposed oxyacid groups;

wherein said polymerized lipid assemblies are capable of inhibiting the binding between a first cell having a receptor and a second cell having a ligand for said receptor.

12. The composition of claim 11, further comprising one or more surface exposed carbohydrates.

13. The composition of claim 12, wherein said one or more surface exposed carbohydrates are selected from the group consisting of sulfated carbohydrates, fucose, sialylated fucooligosaccharides, sialylated fucooligosaccharide analogs, sulfated fucooligosaccharides, maltose, lactose, sialic acid, glycopeptides, and combinations thereof.

14. The compositions of claim 11, wherein said surface exposed carbohydrates are covalently attached to said lipid monomers.

15. The compositions of claim 11, wherein said surface exposed oxyacid group comprises groups of the form $(\text{XO}_n)(\text{O}^-)_p$ where $n+p>2$ and X is an atom capable of binding three or more oxygen atoms.

16. The compositions of claim 15, wherein said groups of the form $(\text{XO}_n)(\text{O}^-)_p$ where $n+p>2$ comprise groups where X is selected from the group consisting of sulphur and phosphorus.

17. The compositions of claim 11, wherein said surface exposed oxyacid group is covalently attached to said lipid monomers.

18. The compositions of claim 11, wherein said receptor comprises a selectin.

19. The compositions of claim 18, wherein said selectin is selected from the group consisting of P-selectin, L-selectin, and E-selectin.

20. The compositions of claim 11, wherein said receptor is selected from the group consisting of lectins, heparin, heparan sulfate, gangliosides, glycans, glycoproteins, and glycolipids.

21. A method for inhibiting the binding between a first cell having a receptor and a second cell having a ligand for said receptor, comprising:

- a) providing:
 - i) a sample containing said first cell and said second cell; and
 - ii) a polymerized lipid assembly comprising a plurality of lipid monomers and one or more surface exposed oxyacid groups; and

b) exposing said polymerized lipid assembly to said first cell.

22. The method of claim 21, wherein said inhibiting the binding between said first cell and said second cell comprises inhibition of cell-cell interactions selected from the group consisting of cell adhesion and cell migration.

23. The method of claim 21, wherein said polymerized lipid assemblies further comprises one or more surface exposed carbohydrates.

24. The method of claim 23, wherein said one or more surface exposed carbohydrates are selected from the group consisting of sulfated carbohydrates, fucose, sialylated