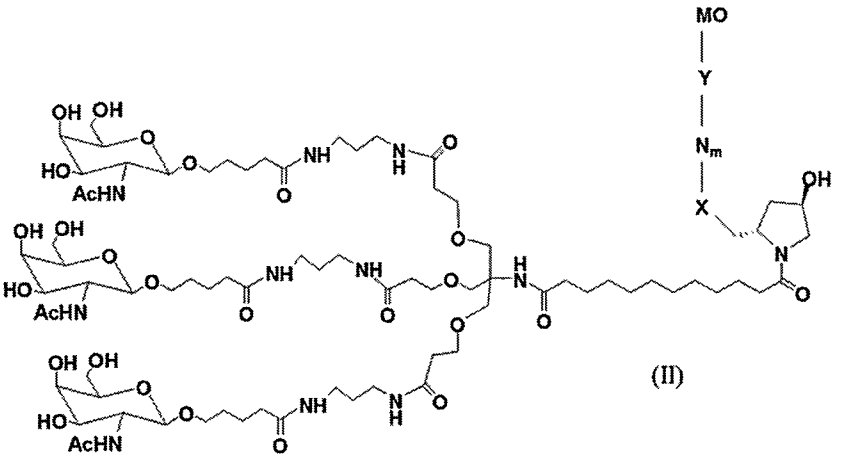
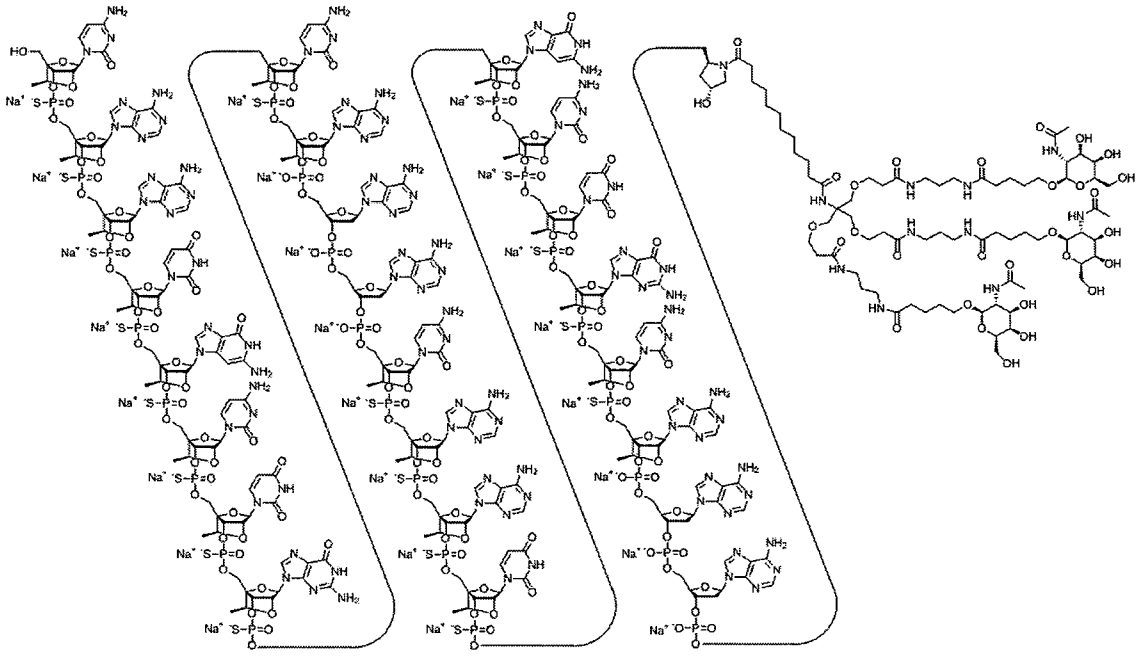
CLAIMS

1. A compound comprising the structure:



wherein X is a phosphodiester linkage; each N of N_m is a deoxyadenosine (A); m is 2; Y is a phosphodiester linkage; and MO is 5'-$C_SA_SA_SU_SG_SC_SU_SG_SC_SA_SAAC_SA_SA_SU_SG_SC_SU_SG_SC_SA_S$-3', wherein each nucleoside followed by a subscript "S" is a S-cEt nucleoside, each nucleoside not followed by a subscript is a deoxynucleoside, and each internucleoside linkage between two S-cEt nucleosides is a phosphorothioate linkage, and the remaining internucleoside linkages are phosphodiester linkages; and wherein Y is linked to the 3' terminus of MO.

2. A compound having the structure:



3. A pharmaceutical composition comprising a compound of claim 1 or claim 2 and a pharmaceutically acceptable carrier.

4. The pharmaceutical composition of claim 3, which comprises 30 mg, 35 mg, 40 mg, 45 mg, 50 mg, 55 mg, 60 mg, 65 mg, 70 mg, 75 mg, 80 mg, 85 mg, 90 mg, 95 mg, 100 mg, 105 mg, 110 mg, 115 mg, 120 mg, 125 mg, 130 mg, 135 mg, 140 mg, 145 mg, 150 mg, 155 mg, 160 mg, 165 mg, 170 mg, 175 mg, 180 mg, 185 mg, 190 mg, 195 mg, 200 mg of the compound.

5. The pharmaceutical composition of claim 3 or claim 4, which is an aqueous composition or a lyophilized composition.

6. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in reducing a blood glucose level of a subject having an elevated blood glucose level or preventing or delaying the onset of an elevated blood glucose level in a subject at risk for developing an elevated glucose level.

7. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in improving insulin sensitivity in a subject with insulin resistance or delaying the onset of insulin resistance in a subject at risk for developing insulin resistance in a subject.

8. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in improving glucose tolerance in a subject with impaired glucose tolerance.

9. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in the treatment of at least one metabolic disorder in a subject or preventing or delaying the onset of at least one metabolic disorder in a subject, wherein the metabolic disorder is optionally selected from pre-diabetes, diabetes, metabolic syndrome, obesity, diabetic dyslipidemia, hyperlipdemia, hypertension, hypertriglyceridemia, hyperfattyacidemia, hypercholesterolemia, and hyperinsulinemia.

10. The compound of any one of claims 6 to 9, wherein the subject has fatty liver disease, wherein the fatty liver disease is optionally selected from non-alcoholic fatty liver disease (NAFLD), alcoholic fatty liver disease, alcoholic steatohepatitis, and non-alcoholic steatohepatitis (NASH).

11. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in the treatment of fatty liver disease wherein the fatty liver disease is optionally selected from non-alcoholic fatty liver disease (NAFLD), alcoholic fatty liver disease, alcoholic steatohepatitis, and non-alcoholic steatohepatitis (NASH).

12. A compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 for use in reducing liver triglycerides.

13. The compound of any one of claims 6 to 8 and 10 to 12, wherein the subject has a metabolic disorder selected from among pre-diabetes, diabetes, metabolic syndrome, obesity, diabetic dyslipidemia, hyperlipdemia, hypertension, hypertriglyceridemia, hyperfattyacidemia, hypercholesterolemia, and hyper-insulinemia.

14. The compound of any one of claims 6 to 13, wherein the use in the specified treatment comprises at least one additional therapy.

15. The compound of claim 14, wherein the at least one additional therapy is a glucose-lowering agent or a lipid lowering agent, wherein the glucose-lowing agent is optionally selected from a PPAR agonist (gamma, dual, or pan), a dipeptidyl peptidase (IV) inhibitor, a GLP-I analog, insulin or an insulin analog, an insulin secretagogue, a SGLT2 inhibitor, a human amylin analog, a biguanide, an alpha-glucosidase inhibitor, a meglitinide, a thiazolidinedione, and sulfonylurea.

16. Use of a compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 in the manufacture of a medicament for the treatment of blood glucose level in a subject by reducing the blood glucose level in a subject, or preventing the elevation of an elevated blood glucose level in a subject.

17. Use of a compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 in the manufacture of a medicament for the treatment of a metabolic disorder, wherein the metabolic disorder is optionally selected from among pre-diabetes, diabetes, metabolic syndrome, obesity, diabetic dyslipidemia, hyperlipdemia, hypertension, hypertriglyceridemia, hyperfattyacidemia, hyper-cholesterolemia, and hyperinsulinemia.

18. Use of a compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 in the manufacture of a medicament for the treatment of fatty liver disease in a subject.

19. Use of a compound of claim 1 or claim 2 or the pharmaceutical composition of any one of claims 3 to 5 in the manufacture of a medicament for the treatment of a subject with insulin resistance, elevated blood glucose levels or elevated HbA1c levels.

20. The use of claim 19, wherein the fatty liver disease is selected from non-alcoholic fatty liver disease (NAFLD), alcoholic fatty liver disease, alcoholic steatohepatitis, and non-alcoholic steatohepatitis (NASH).

21. The use of any one of claims 16 to 20, wherein the medicament once taken reduces the level of liver triglycerides in a subject.

22. The compound of claim 10, wherein the subject has type 2 diabetes and non-alcoholic steatohepatitis.

23. The use of claim 20, wherein the medicament is for the treatment of a subject with type 2 diabetes and non-alcoholic steatohepatitis.