CLAIMS

WHAT IS CLAIMED IS:

1. Use of 2-hydroxypropyl-beta-cyclodextrin for the manufacture of a medicament for treating hypertriglyceridemia in a subject, wherein said medicament is formulated to be administered in a therapeutically effective amount to the subject to treat hypertriglyceridemia and/or to reduce or prevent symptoms of hypertriglyceridemia.

2. The use according to claim 1, wherein the hypertriglyceridemia is caused by high triglyceride levels in the subject, overeating, obesity, diabetes and/or insulin resistance, excessive alcohol consumption, kidney failure, nephrotic syndrome, genetic predisposition, lipoprotein lipase deficiency, lysosomal acid lipase deficiency, hypothyroidism, lupus, glycogen storage disease, propofol, and/or HIV medication.

3. Use of 2-hydroxypropyl-beta-cyclodextrin for the manufacture of a medicament for reducing symptoms of or inhibiting the development of hypertriglyceridemia in a subject, wherein said medicament is formulated to be administered in a therapeutically effective amount to the subject, the therapeutically effective amount being:

(a) an amount effective to increase a circulating and/or systemic level of one or more oxysterol in the subject by at least about 10% after the administering as compared to prior to the administering;

(b) an amount effective to increase plasma cholesterol crystal dissolution capacity (CCDC) by at least about 10% after the administering as compared to prior to the administering;

(c) an amount effective to increase a level of ABCA1 and/or ABCG1 by at least about 10% after the administering as compared to prior to the administering;

(d) about 50 mg/kg to about 2,000 mg/kg

(e) an amount effective to decrease the amount of serum triglyceride by at least 10% after the administering as compared to prior to the administering; or

(f) any combination thereof,

thereby reducing symptoms of or inhibiting the development of hypertriglyceridemia in the subject.

4. The use according to any one of the preceding claims, wherein:

(a) said medicament is formulated to maintain a reduced serum triglyceride level below at least 250 mg/dL for at least 24 hours, at least 48 hours, at least 72 hours, at least a week, at least two weeks, at least three weeks or at least four weeks after administration, optionally

wherein said medicament is formulated to maintain a reduced serum triglyceride level below at least 150 mg/dL for at least two weeks;

(b) the therapeutically effective amount is about 2 g to about 250 g of the 2-hydroxypropyl-beta-cyclodextrin;

(c) the therapeutically effective amount is an amount sufficient to achieve a serum, plasma, and/or whole blood concentration of 2-hydroxpropyl-beta-cyclodextrin of about 0.6 mM to about 3 mM; and/or

(d) the therapeutically effective amount is an amount effective to increase a circulating and/or systemic level of one or more oxysterol in the subject by at least about 10% after the administering as compared to prior to the administering, optionally wherein:

(d)(i) the circulating and/or systemic levels comprise serum, plasma, and/or whole blood levels;

(d)(ii) the one or more oxysterols are selected from the group consisting of: 27-hydroxycholesterol and 24-hydroxycholesterol;

(d)(iii) the at least about 10% comprises at least about 15%, at least about 20%, at least about 30%, at least about 40%, or at least about 50%;

(d)(iv) the therapeutically effective amount is an amount effective to increase a circulating and/or systemic level of one or more oxysterol to about 40 ng/mL or greater;

(d)(v) the therapeutically effective amount is an amount effective to increase a circulating and/or systemic level of one or more oxysterol to at least about 40 ng per mg of total circulating and/or systemic cholesterol;

(d)(vi) the one or more oxysterol comprises 27-hydroxycholesterol, optionally wherein the therapeutically effective amount is an amount effective to increase the circulating and/or systemic level of 27-hydroxycholesterol to at least about 100 ng/mL and/or the therapeutically effective amount is an amount effective to increase the circulating and/or systemic level of 27-hydroxycholesterol to at least about 90 ng per mg of total circulating and/or systemic cholesterol; and/or

(d)(vii) the therapeutically effective amount is an amount sufficient to sustain the circulating and/or systemic level of the one or more oxysterol for at least 24 hours.

5. The use according to any one of the preceding claims, wherein:

(a) the therapeutically effective amount is an amount effective to increase plasma cholesterol crystal dissolution capacity (CCDC) by at least about 10% after the administering as compared to prior to the administering;

(b) the therapeutically effective amount is an amount effective to increase a level of ABCA1 and/or ABCG1 by at least about 10% at after the administering as compared to prior to the administering;

(c) the therapeutically effective amount is an amount effective to decrease the amount of serum triglyceride by at least 10% after the administering as compared to prior to the administering;

(d) the therapeutically effective amount is about 50 mg/kg to about 2,000 mg/kg, optionally wherein:

(d)(i) the therapeutically effective amount is at least about 100 mg/kg;

(d)(ii) the therapeutically effective amount is at least about 250 mg/kg;

(d)(iii) the therapeutically effective amount is at least about 500 mg/kg;

(d)(iv) the therapeutically effective amount is at least about 1,000 mg/kg;

(d)(v) the therapeutically effective amount is at least about 1,500 mg/kg;

(d)(vi) the therapeutically effective amount is about 500 mg/kg to about 1,500 mg/kg; or

(d)(vii) the therapeutically effective amount is about 800 mg/kg to about 1,200 mg/kg; and/or

(e) the subject is an human individual.

6. The use according to any one of the preceding claims, wherein said medicament is formulated to be: (i) administered, at a first time point, in a therapeutically effective first dose to the subject; and (ii) administered, at a second time point, in a therapeutically effective second dose to the subject, optionally wherein:

(a) the second time point is at least 1 week after the first time point;

(b) the second time point is at least 2 weeks after the first time point; and/or

(c) the second time point is at least one month after the first time point.

7. The use according to any one of the preceding claims, wherein:

(a) said medicament is formulated to decrease or prevent progression and/or development of hypertriglyceridemia in the subject;

(b) said medicament is formulated to mediate the regression of elevated serum triglyceride level in the subject;

(c) said medicament is formulated to result in one or more of the following:

i) liver enzyme (e.g., ALT, AST) levels less than 2.5 times to normal;

ii) serum creatinine levels less than 0.3 mg/dl; or

iii) no substantial loss of sensorineural hearing; and/or

(d) said medicament is formulated to be administered by intravenous administration.

8. A pharmaceutical composition comprising: an amount of 2-hydroxypropyl-beta-cyclodextrin effective to treat hypertriglyceridemia in a subject, and a pharmaceutically acceptable excipient.

9. A pharmaceutical composition comprising: about 4 g to about 250 g of 2-hydroxypropyl-beta-cyclodextrin and a pharmaceutically acceptable excipient.

10. The pharmaceutical composition of claim 8 or 9, wherein:

(a) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to increase a circulating and/or systemic level of one or more oxysterol in the subject by at least about 10% after administering the pharmaceutical composition to the subject;

(b) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to increase plasma cholesterol crystal dissolution capacity (CCDC) by at least about 10% after administering the pharmaceutical composition to the subject;

(c) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to increase a level of ABCA1 and/or ABCG1 by at least about 10% after administering the pharmaceutical composition to the subject;

(d) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to decrease the amount of serum triglyceride by at least 10% after administering the pharmaceutical composition to the subject;

(e) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to maintain reduced serum triglyceride levels below at least 250 mg/dL for at least 24 hours, at least 48 hours, at least 72 hours, at least a week, at least two weeks, at least three weeks or at least four weeks after administering the pharmaceutical composition to the subject; and/or

(f) the amount of 2-hydroxypropyl-beta-cyclodextrin is an amount effective to maintain a reduced serum triglyceride level below at least 150 mg/dL for at least two weeks after administering the pharmaceutical composition to the subject.

11. The pharmaceutical composition of any one of claims 8-10, formulated for single dose administration and/or intravenous administration.

12. A kit comprising:

(a) one or more container; and

(b) the pharmaceutical composition of any one of claims 8-11, wherein the pharmaceutical composition is contained within the one or more container.

13. The kit of claim 12, further comprising (c) instructions for use of the pharmaceutical composition for the treatment of hypertriglyceridemia in a subject and/or reducing or inhibiting the development of hypertriglyceridemia or symptoms thereof in a subject.

14. The kit of claim 12 or 13, wherein:

(a) at least one of the one or more container is an IV infusion bag;

(b) the one or more container comprises a single container comprising the pharmaceutical composition and one or more additional active pharmaceutical ingredients; and/or

(c) the one or more container comprises a first container containing the pharmaceutical composition and a second container containing one or more additional active pharmaceutical ingredients.

15. The kit of any one of claims 12-14, further comprising one or more additional components selected from the group consisting of: an IV infusion bag, a catheter, tubing, a needle, a syringe, a solution, and any combination thereof.