TITLE

METHODS FOR REDUCING THE RISK OF DIABETES IN PATIENTS BEING TREATED FOR HIGH CHOLESTEROL-RELATED ILLNESSES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. 62/722,766 filed August 24, 2018 and U.S. Provisional Application No. 62/751,404 filed October 26, 2018, the contents of each of which are incorporated herein by reference.

BACKGROUND

Field of the invention

[0002] This application relates to methods and compositions useful for treating diabetes or reducing the risk of diabetic conditions. Low-density lipoprotein cholesterol (LDL-C) and well-established indicator for cardiovascular diseases, as well as a risk factor for diabetes. Similar, hemoglobin A1c (HbA_{1C}) level is a well-known biomarker for diabetes and new-onset diabetes. A common and cornerstone treatment for managing LDL-C level for patients who are either diabetic, at risk of developing new-onset diabetes or at risk of cardiovascular diseases is the administration of statins. However, many patients, for example those with hypercholesterolemia, fail to reduce LDL-C to desired levels with traditional statin therapies. New pharmaceutical drugs have been developed and are effective at reducing cholesterol levels in the human body. Unfortunately, these drugs also induce negative side-effects. Many of the compounds which have been shown to be potent for inhibiting the enzymes of cholesterol biosynthesis are also systemically toxic. Thus, there is a need for new pharmaceutical formulations which are both effective and safe for reducing cholesterol, improving hemoglobin A1c levels, and reducing the risk of developing cardiovascular diseases and diabetic conditions.

SUMMARY

[0002a] In an aspect of the present disclosure, there is provided a use of ETC-1002 in the manufacture of a medicament for decreasing the likelihood of new-onset diabetes in a subject or decreasing the likelihood of worsening existing diabetes in a subject, wherein the subject is receiving treatment ~~ETC-1002 is to be administered~~ with ezetimibe, and one or more statins.

CLAIMS

What is claimed:

1. Use of ETC-1002 in the manufacture of a medicament for decreasing the likelihood of new-onset diabetes in a subject or decreasing the likelihood of worsening existing diabetes in a subject, wherein ~~ETC-1002 is to be administered~~ the subject is receiving treatment with ezetimibe~~,~~ and one or more statins.

2. The use of claim 1, wherein the subject has diabetes.

3. The use of claim 1 or 2, wherein said diabetes is selected from the group consisting of Type 1 diabetes, Type 2 diabetes, Type 3 diabetes, gestational diabetes, latent autoimmune diabetes in adults, maturity onset diabetes of the young, double diabetes, steroid-induced diabetes, brittle diabetes, secondary diabetes, diabetes insipidus, and Juvenile diabetes.

4. The use of claim 1 or 2, wherein the subject has a history of Type 2 diabetes for 6 months or greater.

5. The use of any one of claims 1-4, wherein the subject has been taking stable diabetes medication for three months.

6. The use of any one of claims 1-5, wherein the subject has a HbA_{1c} level between 5% and 10%, or between 7% and 10%.

7. The use of any one of claims 1-6, wherein the subject has a fasting calculated LDL-C level of greater than 70 mg/dL.

8. The use of any one of claims 1-7, wherein the subject has a fasting calculated LDL-C level of between 100 and 220 mg/dL.

9. The use of claim 8, wherein the subject has had a washout of all lipid-modifying therapy (LMT).

10. The use of claim 1, wherein the subject has risk factors for Type 2 diabetes.

11. The use of claim 10, wherein the said risk factors are selected from the group consisting of overweight or obesity, 45 years of age or older, family history of diabetes, high blood pressure, a low level of high-density ~~lipoprotien~~ lipoprotein cholesterol, a high level of triglycerides, a history of gestational diabetes, heart disease or stroke, polycystic ovary syndrome, and acanthosis nigricans.

12. The use of claim 1, wherein the subject is to receive maximally tolerated statin therapy.

13. The use of any one of claims 1-12, wherein ETC-1002 is to be administered in an amount of about 120 mg.

14. The use of any one of claims 1-12, wherein ETC-1002 is to be administered in an amount of about 180 mg.

15. The use of any one of claims 1-14, wherein ezetimibe is to be administered in an amount of about 10 mg.

16. The use of any one of claims 1-15, wherein the subject is a human.

17. The use of claim 16, wherein the subject is identified as a subject with diabetes or with an increased risk of diabetes relative to normal, and an amount of bempedoic acid~~, or ezetimibe,~~ or a combination of bempedoic acid and ezetimibe is to be administered to said subject.

18. The use of claim 17, wherein the amount of bempedoic acid or combination of bempedoic acid and ezetimibe ~~or both~~ is effective to reduce LDL-C in said subject.

19. The use of claim 17 or 18, wherein the increased risk of diabetes is the result of ongoing or expected statin therapy.