COMPOSITIONS COMPRISING 15-HEPE AND METHODS OF USING THE SAME

PRIORITY CLAIM

This application claims priority to U.S. Provisional Application No. 62/269,280, filed December 18, 2015, which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0001] The present disclosure provides compositions, formulations and methods of treating or preventing a disease by administering a pharmaceutical composition comprising 15-hydroxyeicosapentaenoic acid (also referred to as 15-HEPE or 15-OHEPA) to a subject in need thereof.

SUMMARY

[0002] In one aspect, the present disclosure refers to a pharmaceutical composition comprising a pharmaceutically acceptable ester, conjugate, and/or salt of 15-HEPE. In another aspect, the present disclosure refers to the use of a composition as defined here, or a pharmaceutically acceptable derivative thereof, in the manufacture of a medicament for inhibiting or relieving a disease, wherein the disease is selected from the group consisting of impaired insulin sensitivity, psoriasis, fibrosis, cancer, neurodegenerative disorders, inflammatory diseases, adipocyte differentiation, fertility or reproduction issues, pain, and obesity. In yet another aspect, the present disclosure refers to the use of a composition as defined herein, or derivative thereof, in the manufacture of a medicament for increasing absorption of 15-HEPE in a subject in need thereof, wherein the subject is in a fed state. In various examples, there are disclosed compositions and formulations comprising 15-hydroxy eicosapentaenoic acid (hereinafter “15-HEPE”) and methods of treating disease\s and disorders using the same. The compositions and formulations disclosed herein may be used in the treatment of liver disease, arthritis, fibrosis, idiopathic pulmonary fibrosis, impaired insulin sensitivity, psoriasis, cancer (e.g. melanoma), neurodegenerative disorders (e.g. Huntington’s disease), inflammatory diseases, adipocyte differentiation, fertility or reproduction issues, pain, obesity, and their sequelae, among other diseases and disorders.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] Many aspects of the present technology can be better understood with reference to the following drawings. The components in the drawings are not necessarily to scale. Instead, emphasis is placed on illustrating clearly the principles of the present technology.

[0004] Figure 1 graphically illustrates mean plasma concentrations of 15–Hydroxy-Eicosapentaenoic Acid Ethyl Ester [15(S)-HEPE] following a single oral dose of 100 mg, 500 mg, 1000 mg, and 2000 mg DS102, under fasted conditions.

What is claimed is:

1. A pharmaceutical composition comprising a pharmaceutically acceptable ester, conjugate, and/or salt of 15-HEPE.

2. The composition of claim 1, wherein the pharmaceutical composition comprises 100 mg to 1000 mg of the pharmaceutically acceptable ester, conjugate, and/or salt of 15-HEPE and the pharmaceutically acceptable ester, conjugate, and/or salt of 15-HEPE comprises at least about 50%, by weight, of the pharmaceutical composition.

3. The composition of claim 1, wherein the 15-HEPE is in esterified form.

4. The composition of claim 3, wherein the esterified form is a methyl ester form, an ethyl ester form, or a combination thereof.

5. The composition of claim 3, wherein the esterified form is a triglyceride form.

6. The composition of claim 1, wherein the 15-HEPE is in salt form.

7. Use of a composition as defined in claim 1, or a pharmaceutically acceptable derivative thereof, in the manufacture of a medicament for inhibiting or relieving a disease, wherein the disease is selected from the group consisting of impaired insulin sensitivity, psoriasis, fibrosis, cancer, neurodegenerative disorders, inflammatory diseases, adipocyte differentiation, fertility or reproduction issues, pain, and obesity.

8. The use according to claim 7, wherein the cancer is a skin cancer.

9. The use according to claim 8, wherein the skin cancer is melanoma.

10. The use according to claim 7, wherein the neurodegenerative disorder is Huntington's disease.

11. The use according to claim 7, wherein the fibrosis is idiopathic pulmonary fibrosis.

12. The use according to claim 7, wherein the pharmaceutically acceptable derivative thereof comprises an ester, a conjugate, a salt, or a combination thereof.

13. The use according to claim 7, wherein the disease is reduced in comparison to a second subject who has not been administered the composition, and optionally, has been administered a placebo.

14. The use according to claim 7, wherein the effective amount of the composition comprising 15-HEPE or a pharmaceutically acceptable derivative thereof is between about 100 mg to about 2000 mg.

15. Use of a composition as defined in claim 1, or derivative thereof, in the manufacture of a medicament for increasing absorption of 15-HEPE in a subject in need thereof, wherein the subject is in a fed state.

16. The use of claim 15, wherein the pharmaceutically acceptable derivative thereof comprises an ester, a conjugate, a salt or a combination thereof.