therapies. The present invention satisfies this need and provides other advantages as well.

BRIEF SUMMARY

[00011a] In one aspect, the present disclosure refers to use of a therapeutically effective amount of a composition comprising: an adiponectin peptidomimetic compound and a Lifitegrast and a pharmaceutically acceptable carrier to treat dry eye in the subject in the manufacture of a medicament for treating dry eye in a subject in need thereof.

[00011b] In another aspect, the present disclosure refers to use of a therapeutically effective amount of a composition comprising an adiponectin peptidomimetic compound as disclosed herein or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, and a therapeutic agent to treat an ocular disease associated with inflammation in the subject in the manufacture of a medicament for treating the ocular disease associated with inflammation in a subject in need thereof.

[00011c] In yet another aspect, the present disclosure refers to use of:

a) a therapeutically effective amount of an adiponectin peptidomimetic compound as disclosed herein or a pharmaceutically acceptable salt thereof~~,~~ and

b) a pharmaceutically acceptable carrier; and

c) a therapeutic agent

to alleviate at least one symptom or clinical sign of dry eye in the subject in the manufacture of a medicament for alleviating at least one symptom or clinical sign of dry eye in a subject in need thereof

[00011d] In yet another aspect, the present disclosure refers to use of:

a) a therapeutically effective amount of an adiponectin peptidomimetic compound as disclosed herein or a pharmaceutically acceptable salt thereof; and

b) a pharmaceutically acceptable carrier; and

c) a therapeutic agent

to treat an ocular disease associated with inflammation in the subject in the manufacture of a medicament for treating the ocular disease or disorder in a subject in need thereof.

[00012] In one example, provided herein are compositions and methods for treating dry eye in a subject in need thereof. The method comprises administering to the subject a therapeutically effective amount of composition comprising: an adiponectin peptidomimetic compound and a Lifitegrast and a pharmaceutically acceptable carrier to treat dry eye in the subject.

[00013] In some examples, the composition and therapeutic agent are administered topically, by intravitreal injection, by subconjunctival injection, by conjunctival injection, by intramuscular injection, by subcutaneous injection, by intravenous injection, by intracameral injection, or by implantation into the subject's eye. In some examples, the dry eye is selected from the group consisting of hypolacrimation, tear deficiency, xerophthalmia, Sjogren's syndrome dry eye, non-Sjogren's syndrome dry eye, keratoconjuctivitis sicca, aqueous tear-deficiency dry eye (ADDE), evaporative dry eye (EDE), environmental dry eye, Stevens- Johnson syndrome, ocular pemphigoid, blepharitis marginal, eyelid-closure failure, sensory nerve paralysis, allergic conjunctivitis-associated dry eye, post-viral conjunctivitis dry eye, post- cataract surgery dry eye, VDT operation-associated dry eye, and contact lens wearing-associated dry eye.

[00014] In some instances, the composition and therapeutic agent are each administered to the subject once a day, two times a day, three times a day, four times a day, or more often (more frequently). In other instances, the composition and therapeutic agent are each administered every other day or less often (less frequently). In some examples, the adiponectin peptidomimetic compound is present in an amount between about 0.0001% (wt) to about 90% (wt) of the final composition. In some examples, the therapeutic agent is present in an amount between about 0.1% to about 20%. In some examples, the composition and therapeutic agent are each in a formulation selected from the

group consisting of a solution, suspension, syrup, liquid, gel, hydrogel, emulsion, liposome, aerosol, mist, film, suspension, plug, polymer, implant, contact lens, ocular insert, nanoparticle, microparticle, a sustained release formulation, and a formulation suitable for an ocular medical device. In some examples the method further comprises administering a composition comprising cyclosporine, artificial tears, a corticosteroid, an anti-inflammatory agent, or any combination thereof.

[00015] In some examples, the adiponectin peptidomimetic compound is represented by Formula II: Xaai-Ile-Pro-Xaa_2-Leu-Tyr-Xaa_3-Phe-Ala-Xaa_4-Xaa_5 (SEQ ID NO:2) (II); wherein the C-terminal amino acid is optionally amidated; a variant thereof; a derivative thereof; or a pharmaceutically acceptable salt thereof. In some instances, the adiponectin peptidomimetic compound is selected from the group consisting of D-Asn-Ile-Pro-Nva-Leu- Tyr-D-Ser-Phe-Ala-D-Ser (SEQ ID NO:3), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D- Ser-p-Ala (SEQ ID NO:4), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-p-Ala-NH_2 (SEQ ID NO:5), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-NH_2 (SEQ ID NO:6), (D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-His-Pro)$_2$-Dab-NH_2 (SEQ ID NO:7), a variant thereof, a derivative thereof, and a pharmaceutically acceptable salt thereof, wherein Dab represents 2,3-diamino butyric acid). In some examples, the adiponectin peptidomimetic compound is ADP 355 (SEQ ID NO:6), or a pharmaceutically acceptable salt thereof.

[00016] In one example, the therapeutic agent is selected from Lifitegrast and Restasis® or a pharmaceutically acceptable salt thereof. In some examples, the therapeutic agent comprises about 3.5% to about 6.5% Lifitegrast.

[00017] In another example, provided herein is a method for treating an ocular disease associated with inflammation in a subject in need thereof. The method comprises administering to the subject a therapeutically effective amount of a composition comprising an adiponectin peptidomimetic compound (SEQ ID NO:6) or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, and administering a therapeutic agent to treat the ocular disease associated with inflammation in the subject.

[00018] In another example, provided herein is a method for alleviating at least one symptom or clinical sign of dry eye in a subject in need thereof. The method comprises administering to the subject a therapeutically effective amount of an adiponectin peptidomimetic compound (SEQ ID NO:6) or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable carrier; and administering a therapeutic agent to alleviate at least one symptom or clinical sign of dry eye in the subject.

[00019] In yet another example, provided herein is a method for treating an ocular disease or disorder in a subject in need thereof. The method comprises administering to the subject a therapeutically effective amount of an adiponectin peptidomimetic compound or a pharmaceutically acceptable salt thereof; and a pharmaceutically acceptable carrier; and administering a therapeutic agent to treat the ocular disease associated with inflammation in the subject.

[00020] In another example, the subject can present with at least one symptom or clinical sign of dry eye selected from the group consisting of a change in tear secretion, a change in tear clearance, ocular surface damage, corneal epithelial defects, a change in ocular surface cells, a change in tear film stability, a change in tear volume, a change in tear film composition, a change in tear osmolarity, and any combination thereof.

[00021] Other objects, features, and advantages of the present disclosure will be apparent to one of skill in the art from the following detailed description and figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[00022] FIG. 1 illustrates that administration of an adiponectin peptidomimetic to a mouse model of experimental dry eye (EDE) increased tear volume compared to control untreated EDE mice. Tear volumes were measured at day 5 and day 10 after treatment initiation. Tear volumes in the adiponectin peptidomimetic-treated animals were similar to that of untreated normal mice. Also, tear volume was significantly improved in the treated EDE mice compared to control untreated EDE mice. "UT" represents untreated (normal) mice; "EDE"

WHAT IS CLAIMED IS:

1. Use of a therapeutically effective amount of a composition comprising: an adiponectin peptidomimetic compound and a Lifitegrast and a pharmaceutically acceptable carrier to treat dry eye in the subject in the manufacture of a medicament for treating dry eye in a subject in need thereof.
2. The use of claim 1, wherein the composition and therapeutic agent are to be administered topically, by intravitreal injection, by subconjunctival injection, by conjunctival injection, by intramuscular injection, by subcutaneous injection, by intravenous injection, by intracameral injection, or by implantation into the subject's eye.
3. The use of claim 1, wherein the dry eye is selected from the group consisting of hypolacrimation, tear deficiency, xerophthalmia, Sjogren's syndrome dry eye, non-Sjogren's syndrome dry eye, keratoconjuctivitis sicca, aqueous tear- deficiency dry eye (ADDE), evaporative dry eye (EDE), environmental dry eye, Stevens- Johnson syndrome, ocular pemphigoid blepharitis marginal, eyelid-closure failure, sensory nerve paralysis, allergic conjunctivitis-associated dry eye, post-viral conjunctivitis dry eye, post-cataract surgery dry eye, VDT operation-associated dry eye, and contact lens wearing- associated dry eye.
4. The use of claim 1, wherein the composition is to be administered to the subject once a day, two times a day, three times a day, four time a day or more often.
5. The use of claim 1, wherein the therapeutic agent is to be administered to the subject once a day, two times a day, three times a day, four time a day or more often.
6. The use of claim 1, wherein the composition is to be administered every other day or less often.
7. The use of claim 1, wherein the therapeutic agent is to be administered every other day or less often.

8. The use of claim 1, wherein the adiponectin peptidomimetic compound is present in an amount between about 0.0001% (wt) to about 90% (wt) of the final composition.
9. The use of claim 1, wherein the therapeutic agent is to be administered in an amount between about 0.1% (wt) to about 20% (wt) of the final composition.
10. The use of claim 1, wherein the composition is in a formulation selected from the group consisting of a solution, suspension, syrup, liquid, gel, hydrogel, emulsion, liposome, aerosol, mist, film, suspension, plug, polymer, implant, contact lens, ocular insert, nanoparticle, microparticle, a sustained release formulation, and a formulation suitable for an ocular medical device.
11. The use of claim 1, further comprising administration of a composition comprising cyclosporine, artificial tears, a corticosteroid, an anti-inflammatory agent, or any combination thereof.
12. The use of claim 1, wherein the adiponectin peptidomimetic compound is represented by Formula II:
Xaai-Ile-Pro-Xaa_2-Leu-Tyr-Xaa_3-Phe-Ala-Xaa_4-Xaa_5 (SEQ ID NO:2) (II); wherein the C-terminal amino acid is optionally amidated; a variant thereof, derivative thereof, or a pharmaceutically acceptable salt thereof.
13. The use of claim 12, wherein the adiponectin peptidomimetic compound is selected from the group consisting of D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe- Ala-D-Ser (SEQ ID NO:3), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-p-Ala (SEQ ID NO:4), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-p-Ala-NH_2(SEQ ID NO:5), D-Asn-Ile-Pro-Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-NH_2 (SEQ ID NO:6), (D-Asn-Ile-Pro- Nva-Leu-Tyr-D-Ser-Phe-Ala-D-Ser-His-Pro)$_2$-Dab-NH_2(SEQ ID NO:7), a variant thereof, a derivative thereof, and a pharmaceutically acceptable salt thereof.
14. The use of claim 12, wherein the adiponectin peptidomimetic compound is SEQ ID NO:6.
15. The use of claim 1, wherein the therapeutic agent is selected from Lifitegrast and Restasis® or a pharmaceutically acceptable salt thereof.

16. The use of claim 15, wherein the therapeutic agent comprises about 3.5% to about 6.5% Lifitegrast or a pharmaceutically acceptable salt thereof.
17. Use of a therapeutically effective amount of a composition comprising an adiponectin peptidomimetic compound of claim 14 or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, and a therapeutic agent to treat an ocular disease associated with inflammation in the subject in the manufacture of a medicament for treating the ocular disease associated with inflammation in a subject in need thereof.
18. Use of:

a) a therapeutically effective amount of an adiponectin peptidomimetic compound of claim 14 or a pharmaceutically acceptable salt thereof; and
b) a pharmaceutically acceptable carrier; and
c) a therapeutic agent

to alleviate at least one symptom or clinical sign of dry eye in the subject in the manufacture of a medicament for alleviating at least one symptom or clinical sign of dry eye in a subject in need thereof.
19. Use of:

a) a therapeutically effective amount of an adiponectin peptidomimetic compound of claim 14 or a pharmaceutically acceptable salt thereof; and
b) a pharmaceutically acceptable carrier; and
c) a therapeutic agent

to treat an ocular disease associated with inflammation in the subject in the manufacture of a medicament for treating the ocular disease or disorder in a subject in need thereof.
20. The use of claim 1, wherein the subject presents at least one symptom or clinical sign of dry eye selected from the group consisting of a change in tear secretion, a change in tear clearance, ocular surface damage, corneal epithelial defects, a change in ocular surface cells, a change in tear film stability, a change in tear volume, a change in tear film composition, a change in tear osmolarity, and any combination thereof.