In another example, the disclosure provides a pharmaceutical product comprising: a) a neutral diacyl lipid and/or a tocopherol; b) a phospholipid; c) an alcohol; d) optionally, a polar solvent, *e.g.*, a buffer, optionally comprising an antioxidant; and e) an $MC4RA_P$, *e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11, as the sole active ingredient.

In another example, the disclosure provides a pharmaceutical product comprising: a) a neutral diacyl lipid and/or a tocopherol; b) a phospholipid; c) an alcohol; d) optionally, a polar solvent, *e.g.*, a buffer, optionally comprising an antioxidant; and e) an $MC4RA_P$, *e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11, as the sole active ingredient for injection.

In another example, the disclosure provides a pharmaceutical product comprising: a) a neutral diacyl lipid and/or a tocopherol; b) a phospholipid; c) an alcohol; d) optionally, a polar solvent, *e.g.*, a buffer, optionally comprising an antioxidant; and e) an $MC4RA_P$, *e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11, as the active pharmaceutical ingredient.

In another example, the disclosure provides a pharmaceutical product comprising: a) a neutral diacyl lipid and/or a tocopherol; b) a phospholipid; c) an alcohol; d) optionally, a polar solvent, *e.g.*, a buffer, optionally comprising an antioxidant; and e) an $MC4RA_P$, *e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11, as the active pharmaceutical ingredient for injection.

In an aspect, there is provided an injectable composition comprising:

a) glycerol dioleate (GDO);

b) phosphatidylcholine:

c) an alcohol; and

d) setmelanotide as the sole active pharmaceutical.

In an example component, e) provides an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11) as as the sole active ingredient for injection.

In an example component, e) provides an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11) as the active pharmaceutical ingredient.

In an example component, e) provides an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11) as the active pharmaceutical ingredient for injection.

In another aspect, there is provided a unit dosage form comprising the injectable composition as defined above, wherein:

(i) the unit dosage form comprises at least 2, 1.8, 1.6, 1.4, 1.2, 1, 0.8, 0.6, 0.4, or 0.2 mL of the composition; or

(ii) the unit dosage form is disposed in a liquid tight enclosure, optionally, a vial or a cartridge; or;

(iii) the unit dosage form is disposed in an injection device, optionally a manual syringe, or an auto-injector; or

(iv) the unit dosage form comprises 10-70, 20-60, 25-50, 25-40, or 25-35 mg of setmelanotide.

In an example, the injectable pharmaceutical product comprises setmelanotide as the active pharmaceutical ingredient. In an example, the injectable pharmaceutical product comprises a neutral diacyl lipid comprising glycerol dioleate; a phospholipid comprising phosphatidylcholine; an alcohol comprising ethanol; a polar solvent, *e.g.*, a buffer comprising a citrate buffer, *e.g.*, at pH 6.4 comprising EDTA; and setmelanotide.

In an example, the injectable pharmaceutical product comprises, per one milliliter of composition, 419.8 mg glycerol dioleate (GDO); 419.8 mg soybean phosphatidylcholine; 105 mg ethanol; 20 mg citrate buffer; and 30 mg setmelanotide.

In another aspect, there is provided a method of making a composition formulated for injection, comprising setmelanotide as the sole active pharmaceutical ingredient, comprising:

i) providing a mixture of setmelanotide, a first amount of ethanol, and one or more of components:

a) glycerol dioleate;

b) phosphatidylcholine;

c) an alcohol; or

d) a polar solvent, and

ii) adding a second amount of ethanol,

thereby making a composition, formulated for injection, comprising setmelanotide as the sole active pharmaceutical ingredient.

In another example, the disclosure provides a method of making a preparation or composition, *e.g.*, a pharmaceutical composition, comprising setmelanotide; setmelanotide as sole active pharmaceutical ingredient formulated for injection; setmelanotide as the sole active ingredient; setmelanotide as the active pharmaceutical ingredient; setmelanotide as the active pharmaceutical ingredient for injection; or an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11) as the sole active ingredient, as the sole active ingredient for injection, as the active pharmaceutical ingredient, or as the active pharmaceutical ingredient for injection, *e.g.*, a preparation or composition having a controlled level of EtOH, comprising:

ingredient for injection in the preparation. In an example, a method of making the pharmaceutical product described herein comprises a specified order of addition of components to make the pharmaceutical product. In an example, setmelanotide; setmelanotide as sole active pharmaceutical ingredient formulated for injection; setmelanotide as the sole active ingredient; setmelanotide as the active pharmaceutical ingredient; setmelanotide as the active pharmaceutical ingredient for injection; or an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11), as the sole active ingredient, as the sole active ingredient for injection, as the active pharmaceutical ingredient, or as the active pharmaceutical ingredient for injection is contacted with one or more of the other components after the setmelanotide; setmelanotide as sole active pharmaceutical ingredient formulated for injection; setmelanotide as the sole active ingredient; setmelanotide as the active pharmaceutical ingredient; setmelanotide as the active pharmaceutical ingredient for injection; or an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11), as the sole active ingredient, as the sole active ingredient for injection, as the active pharmaceutical ingredient, or as the active pharmaceutical ingredient for injection is contacted with alcohol. The method may further optimize the time required for making the preparation. The pharmaceutical product of setmelanotide; setmelanotide as sole active pharmaceutical ingredient formulated for injection; setmelanotide as the sole active ingredient; setmelanotide as the active pharmaceutical ingredient; setmelanotide as the active pharmaceutical ingredient for injection; or an $MC4RA_P$ (*e.g.*, BIM-22511, BIM-22287, BIM-22512, 001152C, 001543C, 001003C, 001574C, 001555C, 001554C, 001556C, 001358C, 001576C, 001364C, 001258C, or MC4R-11), as the sole active ingredient, as the sole active ingredient for injection, as the active pharmaceutical ingredient, or as the active pharmaceutical ingredient for injection resulting from a specific order of addition of components has a low viscosity and an amount of alcohol that is compatible with *in vivo* use.

In examples, the control of alcohol content and the order of addition can be combined.

In another aspect, there is provided a composition for use in a method of providing setmelanotide as the sole active pharmaceutical ingredient formulated for injection to a subject, comprising administering to the subject an effective amount of the injectable composition as defined above, or the unit dosage as defined above.

In another aspect, there is provided the use of an effective amount of the injectable composition as defined above, or a unit dosage as defined above, in the manufacture of a medicament for providing setmelanotide as the sole active pharmaceutical ingredient formulated for injection to a subject.

The disclosure contemplates all combinations of any one or more of the foregoing aspects and/or examples, as well as combinations with any one or more of the examples set forth in the detailed description and examples.

What is claimed is:

1. An injectable composition comprising:

a) glycerol dioleate (GDO);

b) phosphatidylcholine;

c) an alcohol; and

d) setmelanotide as the sole active pharmaceutical.

2. The injectable composition of claim 1, wherein

(i) the alcohol comprises ethanol; and

(ii) the polar solvent comprises a citrate buffer.

3. The injectable composition of claim 1 or 2, wherein the injectable composition is provided in a device chosen from: a manual syringe or an auto-injector.

4. The injectable composition of any of the preceding claims, further comprising an anti-microbial or microbial-static agent.

5. The injectable composition of any of the preceding claims, wherein the ratio, by weight, of a:b is 70:30 to 40:60.

6. The injectable composition of any of claims 1-4, comprising, per one milliliter of composition:

420 +/- 20% mg glycerol dioleate (GDO);

420 +/- 20% mg soybean phosphatidylcholine;

105 +/- 20% mg ethanol;

20 +/- 20% mg citrate buffer; and

30 +/- 20% mg setmelanotide.

7. The injectable composition of any of claims 1-4, comprising:

(i) neutral diacyl lipid of component a at 20-80%, 30-70%, 33-60%, or 38-43% by weight of components a, b, and c; components a, b, c, and e; or components a, b, c, d, and e of the injectable composition;

(ii) phospholipid of component b at is 20-80%, 30-70%, 33-60%, or 38-43% by weight of components a, b, and c; components a, b, c, and e; or components a, b, c, d, and e of the injectable composition;

(iii) alcohol of component c at 0.1-35%, 5-20%, 8-15 %, or 9-11 % by weight of components a, b, and c; components a, b, c, and e; or components a, b, c, d, and e of the injectable composition;

(iv) polar solvent of component e, at 0.5-10%, 1-5%, or 1-3% by weight of components a, b, and c; components a, b, c, and e; or components a, b, c, d, and e of the injectable composition; and

(v) setmelanotide at 0.1-10%, 0.2-8%, 0.5-6%, 1-4% by weight of components a, b, and c; components a, b, c, and e; or components a, b, c, d, and e of the injectable composition.

8. The injectable composition of any one of the preceding claims, which, upon contact with an aqueous environment, forms or is capable of forming at least one liquid crystalline structure.

9. The injectable composition of any of the preceding claims, wherein the viscosity:

(i) provides for a composition that can be delivered with a device, optionally wherein the device is a syringe with a 27 Gauge needle;

(ii) is sufficient that, upon injection, the initial burst of setmelanotide from the pharmaceutical product after injection gives a ratio of a maximum concentration (C_{max}) in plasma to minimum concentration (C_{min}) in plasma before a next dose is administered of less than 8; or

(iii) is sufficient that, upon injection, the pharmaceutical product provides a low initial release of setmelanotide as measured by a partial area under a setmelanotide concentration curve within the first six hours after dosing that is less than 10% relative to an area under the setmelanotide concentration time curve of a 7 day steady state dosing interval.

10. The injectable composition of any of the preceding claims, wherein the injectable composition is to be injected into a subject, and:

(i) the initial burst of setmelanotide, from the pharmaceutical product after injection, gives a ratio of maximum concentration (C_{max}) in plasma to minimum concentration (C_{min}) in plasma before a next dose is to be administered of less than 8; or

(ii) the pharmaceutical product is to provide a low initial release of setmelanotide as measured by a partial area under a setmelanotide concentration curve within the first six hours after dosing that is less than 10% relative to an area under the setmelanotide concentration time curve of a 7 day steady state dosing interval.

11. A unit dosage form comprising the injectable composition of any of the preceding claims, wherein:

(i) the unit dosage form comprises at least 2, 1.8, 1.6, 1.4, 1.2, 1, 0.8, 0.6, 0.4, or 0.2 mL of the composition; or

(ii) the unit dosage form is disposed in a liquid tight enclosure, optionally, a vial or a cartridge; or;

(iii) the unit dosage form is disposed in an injection device, optionally a manual syringe, or an auto-injector; or

(iv) the unit dosage form comprises 10-70, 20-60, 25-50, 25-40, or 25-35 mg of setmelanotide.

12. A method of making a composition formulated for injection, comprising setmelanotide as the sole active pharmaceutical ingredient, comprising:

i) providing a mixture of setmelanotide, a first amount of ethanol, and one or more of components:

a) glycerol dioleate;

b) phosphatidylcholine;

c) an alcohol; or

d) a polar solvent, and

ii) adding a second amount of ethanol,

thereby making a composition, formulated for injection, comprising setmelanotide as the sole active pharmaceutical ingredient.

13. A composition for use in a method of providing setmelanotide as the sole active pharmaceutical ingredient formulated for injection to a subject, comprising administering to the subject an effective amount of the injectable composition of any one of claims 1 to 10, or the unit dosage of claim 11.

14. Use of an effective amount of the injectable composition of any one of claims 1 to 10, or a unit dosage of claim 11, in the manufacture of a medicament for providing setmelanotide as the sole active pharmaceutical ingredient formulated for injection to a subject.