desPro^{36}exendin-4(1-39)-Lys$_6$-NH$_2$, and~~, optionally, at least one pharmaceutically acceptable excipient,~~ wherein the composition comprises methionine, the composition is free of histidine and the GLP-1 agonist is in an amount of 0.01 mg/ml to 1.5 mg/ml.

In a second aspect, the present invention refers to a liquid composition of the present invention for use in the treatment of diabetes mellitus. In a third aspect, the present invention refers to the use of a composition of the present invention in the manufacture of a pharmaceutical for treating diabetes mellitus, more particularly type II diabetes. In a fourth aspect, the present invention refers to a method for manufacturing a composition of the present invention, comprising formulating a GLP-1 agonist or/and a pharmacologically tolerable salt thereof with methionine~~ and, optionally, at least one pharmaceutically acceptable excipient~~.

In a ~~third~~ fifth aspect, the present invention refers to a composition of the present invention for use as a pharmaceutical.

In a ~~fourth~~ sixth aspect, the present invention refers to a use of the composition of the present invention in the manufacture of a pharmaceutical for treating diabetes mellitus and/ or obesity, wherein said pharmaceutical is to be administered to a patient in need thereof with metformin and/or a pharmacologically tolerable salt, a sulfonylurea and/or a pharmacologically tolerable salt, a glitazone and/or a pharmacologically tolerable salt, and/or a long-acting insulin and/or a pharmacologically tolerable salt~~/insulin derivate, and/~~ or a combination thereof~~, and/or a pharmacologically tolerable salt to a patient in need thereof~~.

It was found that methionine is able to increase the storage stability of a composition comprising a GLP-1 agonist such as AVE0010. Methionine does not affect the physical integrity of these compositions.

Claims:

1. A liquid composition comprising a GLP-1 agonist or/and a pharmacologically tolerable salt thereof, wherein the GLP-1 agonist is desPro^{36}exendin-4(1-39)-Lys_6-NH_2, and wherein the composition comprises methionine, the composition is free of histidine and the GLP-1 agonist is in an amount of 0.01 mg/ml to 1.5 mg/ml.

2. The liquid composition of claim 1, further comprising at least one pharmaceutically acceptable excipient.

3. The liquid composition as claimed in claim 1, wherein the composition comprises a pharmaceutically acceptable preservative, more particularly m-cresol.

4. The liquid composition as claimed in any one of claims 1 to 3, wherein the composition comprises glycerol.

5. The liquid composition as claimed in any one of the preceding claims, wherein the composition has a pH in the range from 3.5 to 5.

6. The liquid composition as claimed in any one of the preceding claims, wherein the composition comprises methionine in an amount ranging from 0.5 mg/mL to 20 mg/mL, preferably in an amount ranging from 1 mg/mL to 5 mg/mL.

7. The liquid composition as claimed in any one of the preceding claims, wherein the composition has the following constituents:
   (a) desPro^{36}exendin-4(1-39)-Lys_6-NH_2,
   (b) sodium acetate,
   (c) m-cresol,
   (d) L-methionine,
   (e) 85% glycerol,
   (f) approximately 0.1 N hydrochloric acid, if adjustment to a pH of approximately 4.5 is required,
   (g) approximately 0.1 N NaOH solution, if adjustment to a pH of approximately 4.5 is required, and
   (h) water.

8. The liquid composition as claimed in any one of the preceding claims, wherein the composition is an injectable composition.

9. A liquid composition as claimed in any one of the preceding claims for use in the treatment of diabetes mellitus.

10. Use of a composition as claimed in any one of claims 1 to 8 in the manufacture of a pharmaceutical for treating diabetes mellitus, more particularly type II diabetes.

11. A method for manufacturing a composition as claimed in any one of claims 1 to 8, comprising formulating a GLP-1 agonist or/and a pharmacologically tolerable salt thereof with methionine.

12. The method of claim 11, wherein the composition further comprises at least one pharmaceutically acceptable excipient.

13. A composition as claimed in any one of claims 1 to 8 for use as a pharmaceutical.

14. Use of the composition as claimed in any one of preceding claims 1 to 8 in the manufacture of a pharmaceutical for treating diabetes mellitus and/ or obesity, wherein said pharmaceutical is to be administered to a patient in need thereof with metformin and/or a pharmacologically tolerable salt, a sulfonylurea and/or a pharmacologically tolerable salt, a glitazone and/or a pharmacologically tolerable salt, and/or a long-acting insulin and/or a pharmacologically tolerable salt or a combination thereof.

15. The use as claimed in claim 10 or 14, comprising an add-on therapy in patients where sufficient blood sugar control could not be achieved with metformin, a sulfonylurea, a glitazone, and/or a long-acting insulin.

16. The use of the composition as claimed in claim 10, or 14 or 15, wherein the treated patients have an HbA1c value in the range from 7% to 10%.

17. The use of the composition as claimed in claim 14 wherein diabetes mellitus is type Ii diabetes.

18. The use of the composition as claimed in any one of claims 10, and 14 to 17 and wherein said composition is to be administered in patients with type II diabetes as a supplement to a diet in order to improve blood sugar control.

19. The use of the composition as claimed in any one of claims 10 and 14 to 18, wherein said composition is to be administered in patients once a day.

Claims:

1. A liquid composition comprising a GLP-1 agonist or/and a pharmacologically tolerable salt thereof, wherein the GLP-1 agonist is desPro^{36}exendin-4(1-39)-Lys_6-NH_2, and, optionally, at least one pharmaceutically acceptable excipient, wherein the composition comprises methionine, the composition is free of histidine and the GLP-1 agonist is in an amount of 0.01 mg/ml to 1.5 mg/ml.

2. The liquid composition as claimed in claim 1, wherein the composition comprises a pharmaceutically acceptable preservative, more particularly m-cresol.

3. The liquid composition as claimed in claim 1 or 2, wherein the composition comprises glycerol.

4. The liquid composition as claimed in any one of the preceding claims, wherein the composition has a pH in the range from 3.5 to 5.

5. The liquid composition as claimed in any one of the preceding claims, wherein the composition comprises methionine in an amount ranging from 0.5 mg/mL to 20 mg/mL, preferably in an amount ranging from 1 mg/mL to 5 mg/mL.

6. The liquid composition as claimed in any one of the preceding claims, wherein the composition has the following constituents:
   (a) desPro^{36}exendin-4(1-39)-Lys_6-NH_2,
   (b) sodium acetate,
   (c) m-cresol,
   (d) L-methionine,
   (e) 85% glycerol,
   (f) approximately 0.1 N hydrochloric acid, if adjustment to a pH of approximately 4.5 is required,
   (g) approximately 0.1 N NaOH solution, if adjustment to a pH of approximately 4.5 is required, and
   (h) water.

7. The composition as claimed in any one of the preceding claims, wherein the composition is an injectable composition.

8. The composition as claimed in any one of the preceding claims for treating diabetes mellitus.

9. The use of a composition as claimed in any one of claims 1 to 8 in the manufacture of a pharmaceutical for treating diabetes mellitus, more particularly type II diabetes.

10. A method for manufacturing a composition as claimed in any one of claims 1 to 8, comprising formulating a GLP-1 agonist or/and a pharmacologically tolerable salt thereof with methionine and, optionally, at least one pharmaceutically acceptable excipient.

11. A composition as claimed in any one of claims 1 to 8 for use as a pharmaceutical.

12. Use of the composition as claimed in any one of preceding claims 1 to 7 in the manufacture of a pharmaceutical for treating diabetes mellitus and/ or obesity, wherein said pharmaceutical is to be administered with metformin, a sulfonylurea, a glitazone, and/or a long-acting insulin/insulin derivate, and/or a combination thereof, and/or a pharmacologically tolerable salt to a patient in need thereof.

13. The use as claimed in claim 9 or 12, comprising an add-on therapy in patients where sufficient blood sugar control could not be achieved with metformin, a sulfonylurea, a glitazone, and/or a long-acting insulin/insulin derivate.

14. The use of the composition as claimed in claim 9, or 12 or 13, wherein the treated patients have an HbA1c value in the range from 7% to 10%.

15. The use of the composition as claimed in claim 12 wherein diabetes mellitus is type II diabetes.

16. The use of the composition as claimed in any one of claims 9, and 12 to 15 and wherein said composition is to be administered in patients with type II diabetes as a supplement to a diet in order to improve blood sugar control.

17. The use of the composition as claimed in any one of claims 9 and 12 to 16, wherein said composition is to be administered in patients once a day.