Claims

1. A pharmaceutical composition comprising:

a pharmaceutically effective amount of at least one peptide; wherein said at least one peptide exhibits molecular weight of equal to or less than 60 kDa and

a pharmaceutically acceptable amount of a combination of:

(a) at least one metal salt and a metal complex; and

(b) at least one reducing agent,

wherein, said at least one metal salt and a metal complex is selected from any or a combination of: vanadium (V) oxide, sodium vanadate, vanadium sulfate, manganese gluconate, potassium permanganate, chromium picolinate and chromium chloride, and wherein said combination of (a) at least one metal salt and a metal complex and (b) at least one reducing agent affords protection, at least in part, to said at least one peptide from proteolytic degradation upon ingestion thereof.

2. The pharmaceutical composition as claimed in claim 1, wherein said at least one metal is vanadium and wherein the pharmaceutical composition comprises any or a combination of the salt of vanadium and the complex of vanadium in an amount ranging from 0.01 mg to 15 mg per unit dose.

3. The pharmaceutical composition as claimed in claim 2, wherein the any of the salt of vanadium and the complex of vanadium is selected independently from a group comprising: vanadium (V) oxide, sodium vanadate, vanadium sulfate, vanadyl sulfate, vanadium biguanide, bis(maltolato)oxavandium (IV), vanadium acetate, vanadyl picolinate and vanadyl citrate.

4. The pharmaceutical composition as claimed in claim 1, wherein said at least one metal is chromium and wherein the pharmaceutical composition comprises any or a combination of the salt of chromium and the complex of chromium in an amount ranging from 0.02 mg to 0.5 mg per unit dose.

5. The pharmaceutical composition as claimed in claim 4, wherein the any of the salt of chromium and the complex of chromium is selected independently from a group comprising: chromium picolinate, chromium polynicotinate, chromium nicotinate, chromium chloride and chromium acetate.

6. The pharmaceutical composition as claimed in claim 1, wherein said at least one metal is manganese and wherein the pharmaceutical composition comprises any or a combination of the salt of manganese and the complex of manganese in an amount ranging from 0.1 mg to 10 mg per unit dose.

7. The pharmaceutical composition as claimed in claim 6, wherein the any of the salt of manganese and the complex of manganese is selected independently from a group comprising: manganese gluconate, manganese sulfate, potassium permanganate and manganese chloride.

8. The pharmaceutical composition as claimed in claim 1, wherein said at least one peptide exhibits molecular weight of equal to or less than 60 kDa.

9. The pharmaceutical composition as claimed in claim 1, wherein said at least one peptide is selected from a group comprising: insulin, an insulin analog, insulin lispro, insulin PEGlispro, insulin aspart, insulin glulisine, insulin glargine, insulin detemir, NPH insulin, insulin degludec, B29K(N(ε)hexadecanedioyl-γ-L-Glu) A14E B25H desB30 human insulin, B29K(N(ε)octadecanedioyl-γ-L-Glu-OEG-OEG) desB30 human insulin, B29K(N(ε)octadecanedioyl-γ-L-Glu) A14E B25H desB30 human insulin, B29K(N(ε)eicosanedioyl-γ-L-Glu) A14E B25H desB30 human insulin, B29K(N(ε)octadecanedioyl-γ-L-Glu-OEG-OEG) A14E B25H desB30 human insulin, B29K(N(ε)eicosanedioyl-γ-L-Glu-OEG-OEG) A14E B25H desB30 human insulin, B29K(N(ε)eicosanedioyl-γ-L-Glu-OEG-OEG) A14E B16H B25H desB30 human insulin, B29K(N(ε)hexadecanedioyl-γ-L-Glu) A14E B16H B25H desB30 human insulin, B29K(N(ε)eicosanedioyl-γ-L-Glu-OEG-OEG) A14E B16H B25H desB30 human insulin, B29K(N(ε)octadecanedioyl) A14E B25H desB30 human insulin, GLP-1, a GLP-1 analog, an acylated GLP-1 analog, a diacylated GLP-1 analog, semaglutide, liraglutide, exenatide, lixizenatide, a dual agonist of the GLP-1 receptor and the glucagon receptor, amylin, an amylin analog, pramlintide, a somatostatin analog, octreotide, lanreotide, pasireotide, goserelin, buserelin, leptin, a leptin analog, metreleptin, peptide YY, a peptide YY analog, glatiramer, leuprolide, teriparatide, desmopressin, human growth hormone, a human growth hormone analog, a glycopeptide antibiotic, a glycosylated cyclic or polycyclic nonribosomal peptide antibiotic, vancomycin, teicoplanin, telavancin, bleomycin, ramoplanin, decaplanin, bortezomib, cosyntropin, chorionic gonadotropin, menotropin, sermorelin, luteinizinghormone-releasing hormone, somatropin, calcitonin, calcitonin-salmon, pentagastrin, oxytocin, neseritide, anakinra, enfuvirtide, pegvisomant, dornase alfa, lepirudin,

anidulafungin, eptifibatide, interferon alfacon-1, interferon alpha-2a, interferon alpha2b, interferon beta-1a, interferon beta-1 b, interferon gamma-1 b, peginterferon alfa2a, peginterferon alfa-2b, peginterferon beta-1a, fibrinolysin, vasopressin, aldesleukin, epoetin alfa, darbepoetin alfa, epoetin beta, epoetin delta, epoetin omega, epoetin zeta, filgrastim, interleukin-11, cyclosporine, glucagon, urokinase, viomycin, thyrotropinreleasing hormone, leucine-enkephalin, methionine-enkephalin, substance P, adrenocorticotropic hormone, parathyroid hormone, and pharmaceutically acceptable salts thereof.

10. The pharmaceutical composition as claimed in claim 1, wherein said at least one peptide and said at least one metal in form of any or a combination of a salt thereof and a complex thereof are present in physically separated form in said pharmaceutical composition.

11. The pharmaceutical composition as claimed in claim 1, wherein said at least one peptide and said at least one metal in form of any or a combination of a salt thereof and a complex thereof are present in separate compartments.

12. The pharmaceutical composition as claimed in claim 1, wherein said pharmaceutical composition is present in form of any of capsule-in-capsule and tablet-in-capsule.

13. The pharmaceutical composition as claimed in claim 1, wherein said at least one reducing agent is selected from any or a combination of ascorbic acid, reduced glutathione, cysteine, uric acid, reducing sugar, glyceraldehyde, α-tocopherol, vitamin A, α-lipoic acid, dihydro-α-lipoic acid, glucose, galactose, lactose, maltose, thiolbearing compound, a thiomer and pharmaceutically acceptable salts thereof.

14. The pharmaceutical composition as claimed in claim 1, wherein said pharmaceutical composition comprises the at least one reducing agent in an amount ranging from 1 mg to 1000 mg per unit dose.

15. The pharmaceutical composition as claimed in claim 1, wherein said pharmaceutical composition further comprises at least one absorption enhancer and wherein the at least one absorption enhancer is present in an amount ranging from 10 mg to 1000 mg per unit dose.

16. The pharmaceutical composition as claimed in claim 1, wherein said pharmaceutical composition is formulated as any of a solid oral dosage form and a liquid oral dosage form, with proviso that when said pharmaceutical composition is formulated as the liquid oral dosage form, the pharmaceutical composition comprises water in an amount of less than 5% v/v.