Claims

1. A composition for stimulating the formation of one or more extracellular matrix components in skin or mucosa, comprising ~~a lipoaminoacid derivative of the dipeptide carnosine~~ N-Octanoyl Carnosine, lipoaminoacid derivative of the tripeptide GHK (N-Palmitoyl-GHK), and the tetra-peptide GEKG (SEQ ID NO:1) at a weight ratio of 4:1:5.

~~2. The composition of claim 1, wherein the lipoaminoacid derivative of the dipeptide carnosine is N-Octanoyl Carnosine.~~

~~3~~2. The composition of claim ~~2~~1, wherein the composition further comprises one or more carriers or excipients suitable for topical administration or subcutaneous administration.

~~4~~3. The composition of claim ~~3~~2, wherein the one or more extracellular matrix components are selected from the group consisting of collagen I, collagen, III, collagen V, collagen VI, collagen VII, collagen XVI, elastin, laminin, hyaluronic acid, fibrillin, heparan sulfate proteoglycan 2, and combinations thereof.

~~5~~4. The composition of claim ~~4~~3, wherein the composition stimulates the formation of one or more extracellular matrix components predominantly associated with skin aging selected from the group consisting of collagen I, collagen III, collagen VII, elastin, hyaluronic acid, and combinations thereof.

~~6~~5. The composition of claim ~~4~~3, wherein the composition stimulates the formation of collagen III to a higher degree than the formation of collagen I.

~~7~~6. The composition of claim ~~6~~5, wherein the composition further comprises one or more additional active ingredients, wherein the combination of active ingredients stimulates formation of hyaluronic acid.

~~8~~7. The composition of claim ~~7~~6, wherein the one or more additional active ingredients are selected from the group consisting of tripeptides, tetrapeptides, and combinations thereof.

~~9~~8. The composition of claim ~~8~~7, wherein the composition comprises Octanoyl Carnosine, the lipoaminoacid derivative of the tripeptide GHK (N-Palmitoyl-GHK), and the tetra-peptide GEKG (SEQ ID NO:1).

~~10~~9. The composition of claim ~~3~~2, wherein the composition is suitable for topical administration in humans on skin, aged skin, damaged skin, skin after cosmetic and dermatological procedures, atrophic

skin, atrophic mucosa, wounded skin, vulva, vagina, atrophic vulva, atrophic vagina, vulvovaginal atrophy, or on skin and mucosa associated with changes in extracellular matrix components.

~~11~~10. The composition of claim ~~9~~8, wherein the composition is suitable for topical administration in humans on skin, aged skin, damaged skin, skin after cosmetic and dermatological procedures, atrophic skin, wounded skin, vulva, vagina, atrophic vulva, atrophic vagina, or on skin and mucosa associated with changes in extracellular matrix components.

~~12~~11. The composition of claim ~~8~~7, wherein the combination of Octanoyl Carnosine, tripeptides, and tetrapeptides stimulates the production of extracellular matrix components in skin or epithelial cells to a greater degree than any one or two active ingredients alone.

~~13. The composition of claim 9, wherein the composition comprises Octanoyl Carnosine, Palmitoyl-GHK, and GEKG at a weight ratio of 4:1:5.~~

~~14~~12. The composition of claim ~~3~~2, wherein the composition comprises between about 0.0001% to 10% per weight of Octanoyl Carnosine.

~~15~~13. The composition of claim ~~1~~3, wherein the composition comprises between about 0.0001% to 10% per weight of Octanoyl Carnosine.

~~16~~14. The composition of ~~1~~3, wherein the composition comprises about 0.004% per weight of Octanoyl Carnosine; about 0.001% per weight of Palmitoyl-GHK, and about 0.005% per weight of GEKG, and one or more acceptable carriers or excipients suitable for topical application in humans on skin, aged skin, damaged skin, skin after cosmetic and dermatological procedures, wounded skin, atrophic skin, atrophic mucosa, atrophic vulva, atrophic vagina, or for skin and mucosa associated with changes in extracellular matrix components.

~~17~~15. A pharmaceutical composition comprising the composition of claim ~~8~~7 and one or more pharmaceutically acceptable carriers.

~~18~~16. The pharmaceutical composition of claim ~~17~~5, wherein the composition comprises Octanoyl Carnosine, the lipoaminoacid derivative of the tripeptide GHK (N-Palmitoyl-GHK), and the tetra-peptide GEKG (SEQ ID NO:1).

~~19~~17. The pharmaceutical composition of claim ~~18~~6, wherein the composition comprises Octanoyl Carnosine, Palmitoyl-GHK, and GEKG at a weight ratio of 4:1:5.

~~20~~18. A cosmetic composition comprising the composition of claim ~~8~~7 and one or more

cosmetically acceptable carriers.

~~21~~19. The cosmetic composition of claim ~~20~~18, wherein the composition comprises Octanoyl Carnosine, the lipoaminoacid derivative of the tripeptide GHK (N-Palmitoyl-GHK), and the tetra-peptide GEKG (SEQ ID NO:1).

~~22~~20. The cosmetic composition of claim ~~21~~19, wherein the composition comprises Octanoyl Carnosine, Palmitoyl-GHK, and GEKG at a weight ratio of 4:1:5.

~~23~~21. A kit comprising, in one or more containers, the pharmaceutical composition of claim 1~~8~~6 and instructions for use.

~~24~~22. A kit comprising, in one or more containers, the cosmetic composition of claim ~~21~~19 and instructions for use.

~~25. A method of treating, alleviating, or ameliorating a symptom, condition, disorder, or disease of the skin or mucosa, wherein the symptom, condition, disorder, or disease is associated with changes in extracellular matrix components, the method comprising administering an effective amount of the composition of claim 3 to a patient in need thereof.~~

~~26. The method of claim 25, wherein the symptom, condition, disorder, or disease of the skin or mucosa associated with changes in extracellular matrix components is selected from the group consisting of wounds, damaged skin, atrophic skin, atrophic mucosa, aging, age-associated disorders and diseases, atrophy of any human tissue, disorders and diseases of vulvar tissue, vulvovaginal atrophy, and disorders and diseases of vaginal tissue.~~

~~27. The method of claim 26, wherein treating, alleviating, or ameliorating the wound results in scarless wound healing.~~

~~28. The method of claim 26, wherein treating, alleviating, or ameliorating atrophy of any human tissue comprises the treatment of vulvovaginal atrophy.~~

~~29. The method of claim 10, wherein treating, alleviating, or ameliorating skin and mucosa associated with changes in extracellular matrix components comprises the treatment of vulvodynia, lichen sclerosus, vulvar lichen planus, erosive lichen planus, vulvar eczema, vulvar lichen simplex chronicus, ulcers of the vulva, Behcet's disease, vulvar intraepithelial neoplasia, or any combination thereof.~~

~~30. The method of claim 25, wherein the method comprises the repeated topical administration of~~

~~the composition to the patient.~~

~~31. The method of claim 30, wherein the composition is administered to the patient at least once or twice a day for at least 30 days.~~

~~32. The method of claim 25, wherein the method comprises the repeated subcutaneous administration of the composition to the patient.~~

~~33. The method of claim 32, wherein the composition is administered to the patient at least once or twice a day for at least 30 days.~~

~~34. The method of claim 26, wherein the administration of the composition treats, alleviates, or ameliorates one or more visible signs of aging associated with changes in extracellular matrix components selected from the group consisting of fine lines, wrinkles, enlarged pores, roughness, dryness, loss of elasticity, loss of volume, atrophic skin, atrophic vulva, atrophic vagina, stretch marks, puffy eyes, dark (under eye) circles caused by thinning of the skin, dark (under eye) circles caused by insufficient blood circulation and slack tissue, and any combinations thereof.~~

~~35. A method of improving or rejuvenating the appearance of skin comprising administering an effective amount of the composition of claim 3 to a patient in need thereof.~~

~~36. The method of claim 35, wherein the method results in one or more of the following: improving the appearance of aged skin, improving the state of aged skin, reducing the signs of aging, preventing aging, reducing scarring of damaged skin, restoring damaged skin, enhancing the restoration of skin after cosmetic and dermatological procedures, restoring aging vulvar vaginal tissue, reducing scarring of damaged skin, or restoring damaged or pathological skin.~~

~~37. The method of claim 35, wherein the composition is administered to the patient in the form of a cosmetic, a personal care product, a feminine care product, a hygiene product, a dermatology product, a pharmaceutical preparation, a medicament, or any combination thereof.~~

~~38. The method of claim 35, wherein the composition is administered topically to the skin or mucosa of the patient.~~

~~39. The method of claim 35, wherein the composition is administered subcutaneously to the patient.~~

~~40. A method of maintaining healthy skin or of preventing, ameliorating, or delaying aging of skin, the method comprising administering an effect amount of the composition of claim 3 to a patient~~

~~in need thereof.~~

~~41. The method of claim 40, wherein the composition is administered to the patient in the form of a cosmetic, a personal care product, a feminine care product, a hygiene product, a dermatology product, a pharmaceutical preparation, a medicament, or any combination thereof.~~

~~42. The method of claim 40, wherein the composition is administered topically to the skin or mucosa of the patient.~~

~~43. The method of claim 40, wherein the administration of the composition prevents, ameliorates, or delays the development of one or more signs of aging selected from the group consisting of fine lines, wrinkles, enlarged pores, roughness, dryness, loss of elasticity, loss of volume, atrophic skin, atrophic vulva, atrophic vagina, stretch marks, puffy eyes, dark (under eye) circles caused by thinning of the skin, dark (under eye) circles caused by insufficient blood circulation and slack tissue, and any combinations thereof.~~

~~44. A method of treating, alleviating, or ameliorating a symptom, condition, disorder, or disease of the skin or mucosa, wherein the symptom, condition, disorder, or disease is associated with changes in extracellular matrix components which are not related to aging, the method comprising administering an effective amount of the composition of claim 3 to a patient in need thereof.~~

~~45. The method of claim 44, wherein the symptom, condition, disorder, or disease of the skin or mucosa associated with changes in extracellular matrix components not related to aging is selected from the group consisting of wounded skin, damaged skin after cosmetic and dermatological procedures, and atrophy of skin and mucosa due to causes other than aging.~~

~~46. The method of claim 45, wherein the atrophy of skin and mucosa is caused by emotional stress, use of oral contraceptive pills, use of aromatase inhibitors, or any combination thereof.~~

~~47. The method of claim 44, wherein the method comprises the repeated topical administration of the composition to the patient.~~

~~48. The method of claim 47, wherein the composition is administered to the patient at least once or twice a day for at least 30 days.~~

~~49. The method of claim 44, wherein the method comprises the repeated subcutaneous administration of the composition to the patient.~~

~~50. The method of claim 49, wherein the composition is administered to the patient at least once~~

~~or twice a day for at least 30 days.~~