Claims

1. A composition comprising:
    a. 0.01 to 2 wt% peptide or peptide derivative;
    b. 0.01 to 4 wt% saccharide or modified saccharide;
    c. 35 to 50 wt% petrolatum; and
    d. 40 to 60 wt% isopropyl myristate,

    with the proviso that the sum of the components of the total composition does not exceed 100 wt%.

2. The composition according to claim 1, wherein the composition comprises particles comprising, or consisting essentially of the peptide or peptide derivative and the saccharide or modified saccharide.

3. The composition according to any one of the preceding claims, wherein the composition further comprises 1 to 8 wt% thickener.

4. The composition according to claim 3, wherein the thickener is selected from the group consisting of glyceryl behenate and carnauba wax.

5. The composition according to any one of the preceding claims, wherein the composition further comprises 2 to 10 wt% surfactant.

6. The composition according to claim 5, wherein the surfactant is sorbitan laurate.

7. The composition according to any one of the preceding claims, wherein the saccharide of modified saccharide is selected from the group consisting of sucrose, mannitol and glucose.

8. The composition according to any one of the preceding claims, wherein the composition comprises or consists essentially of:
    a. 0.01 to 2 wt% peptide or peptide derivative;
    b. 0.01 to 4 wt% sucrose, mannitol or glucose;
    c. 1 to 8 wt% glyceryl behenate or carnauba wax;
    d. 35 to 45 wt% petrolatum;
    e. 40 to 60 wt% isopropyl myristate; and

f. 2 to 10 wt% surfactant, such as sorbitan laurate.

9. The composition according to any one of the preceding claims, wherein the weight ratio of saccharide or modified saccharide and peptide in the composition is 5:1 to 1:5, such as 2:1 or 1:1.

10. The composition according to any one of the preceding claims, wherein the composition comprises isopropyl myristate and petrolatum in the weight ratio of 2:1 to 1:2, such as 3:2 to 2:3, such as about 1:1

11. The composition according to any one of the preceding claims, wherein the composition comprises or consists essentially of:

a. 0.01 to 2 wt% peptide or peptide derivative;
b. 0.01 to 4 wt% sucrose;
c. 3 wt% glyceryl behenate;
d. 42.4 wt% petrolatum;
e. 50 wt% isopropyl myristate; and
f. 4 wt% sorbitan laurate.

12. The composition according to any one of the preceding claims, wherein the composition comprises or consists essentially of:

a. 0.2 wt% peptide or peptide derivative;
b. 0.4 wt% sucrose;
c. 3 wt% glyceryl behenate;
d. 42.4 wt% petrolatum;
e. 50 wt% isopropyl myristate; and
f. 4 wt% sorbitan laurate.

13. The composition according to any one of the preceding claims, wherein the composition is essentially water free.

14. The composition according to any one of the preceding claims, wherein at least 50% of the particles have an average particle diameter of between 0.1 and 50

µm, for example between 0.1 and 15 µm, such as between 0.1 and 10 µm, such as between 0.1 and 2 µm.

15. The composition according to any one of the preceding claims, wherein the peptide or peptide derivative comprises no more than 50 amino acid residues.

16. The composition according to any one of the preceding claims, wherein the peptide or peptide derivative comprises or consists of from 3 to 50 amino acid residues, such as from 3 to 40 amino acid residues, such as 5 to 30 amino acid residues, such as 10 to 25 amino acid residues.

17. The composition according to any one of the preceding claims, wherein the peptide or peptide derivative comprises:

i) an amino acid sequence of the general formula:

$VDTYDGZ_7Z_8SVVYGLR$ (SEQ ID NO: 165)

wherein:

Z_7 is D or G;

Z_8 is I or G;

ii) an amino acid sequence of the general formula:

$KX_2LAX_5X_6X_7X_8IX_{10}LX_{12}YGIK$ (SEQ ID NO: 140)

wherein:

X_2 is C, P or G;

X_5 is E or G;

X_6 is C, D or I;

X_7 is D, I, S or G;

X_8 is S, D or G;

X_{10} is E or G;

X_{12} is S or T;

with the proviso that if X_{12} is T, the peptide comprises no more than 25 amino acid residues; and

with the proviso that if X_2 is P, X_5 is E, X_6 is I, X_7 is D, X_8 is S, X_{10} is E and X_{12} is S, the peptide comprises no more than 85 amino acid residues;

iii) an amino acid sequence of the general formula:

$X_{10}LX_{12}YGIK$ (SEQ ID NO: 177)

wherein:

X_{10} is E or G;

$X1_2$ is S or T;

with the proviso that if X_{12} is T, the peptide comprises no more than 25 amino acids; and

with the proviso that if X_{10} is E and X_{12} is S, the peptide comprises no more than 85 amino acid residues;

iv) an amino acid sequence of the general formula:

$VDVPZ_5GDISLAYZ_{13}LR$ (SEQ ID NO: 164)

wherein:

Z_5 is E or N;

Z_{13} is R or G;

v) an amino acid sequence of the general formula:

$VDTYDGZ_7Z_8SVVYGLR$ (SEQ ID NO: 165)

wherein:

Z_7 is D or G;

Z_8 is I or G;

vi) an amino acid sequence of the general formula:

$GDPNZ_5Z_6Z_7Z_8Z_9SVVYGLR$ (SEQ ID NO: 166)

wherein:

Z_5 is D or G;

Z_6 is D or G

Z_7 is I or R;

Z_8 is G or absent;

Z_9 is D or absent;

vii) an amino acid sequence of the general formula:

$KX_2LAX_5X_6X_7X_8IX_{10}LSYGIK$ (SEQ ID NO: 162)

wherein:

X_2 is C, P or G;

X_5 is E or G;

X_6 is C, I or absent;

X_7 is D, G or absent;

X_8 is S, G or absent;

X_{10} is E or G;

viii) an amino acid sequence of the general formula:

$KX_2LAX_5IX_{10}LSYGIK$ (SEQ ID NO: 163)

wherein:

X_2 is C, P or G;

X_5 is E or G;

X_{10} is E or G;

i) an amino acid sequence of the general formula:

$Z_7Z_8SZ_{10}Z_{11}YGLR$ (SEQ ID NO: 178)

wherein:

Z_7 is D or G;

Z_8 is I or G;

Z_{10} is V or L;

Z_{11} is V or A;

or

ix) an amino acid sequence of the general formula:

$VDZ_3Z_4Z_5GZ_7Z_8SZ_{10}Z_{11}YGLR$ (SEQ ID NO: 68)

wherein:

Z_3 is T or V;

Z_4 is Y or P;

Z_5 is D or N;

Z_7 is D or G;

Z_8 is I or G;

Z_{10} is V or L;

Z_{11} is V or A.

18. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of the amino acid sequence of VDTYDGDISVVYGLR (SEQ ID NO: 1; FOL-005) or a fragment/variant thereof.

19. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of the amino acid sequence of KPLAEIDSIELSYGIK (SEQ ID NO: 136, FOL-014) or a fragment/variant thereof.

20. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of the amino acid sequence of VDVPNGDISLAYGLR (SEQ ID NO: 69, FOL-004) or a fragment/variant thereof.

21. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of an amino acid sequence selected from the group

consisting of GDPNDGRGDSVVYGLR (SEQ ID NO: 137), VDTYDGGISVVYGLR (SEQ ID NO: 138), and VDTYDGDGSVVYGLR (SEQ ID NO: 139). VDVPEGDISLAYGLR (SEQ ID NO: 157), LDGLVRAYDNISPVG (SEQ ID NO: 158), GDPNGDISVVYGLR (SEQ ID NO: 159), VDVPNGDISLAYRLR (SEQ ID NO: 160) VDVPEGDISLAYRLR (SEQ ID NO: 161).

22. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of an amino acid sequence selected from the group consisting of GDPNDGRGDSVVYGLR (SEQ ID NO: 137), VDTYDGGISVVYGLR (SEQ ID NO: 138), and VDTYDGDGSVVYGLR (SEQ ID NO: 139). VDVPEGDISLAYGLR (SEQ ID NO: 157), LDGLVRAYDNISPVG (SEQ ID NO: 158), GDPNGDISVVYGLR (SEQ ID NO: 159), VDVPNGDISLAYRLR (SEQ ID NO: 160) VDVPEGDISLAYRLR (SEQ ID NO: 161), V(beta-D)TYDGDISVVYGLR (SEQ ID NO:167), VDTY(beta-D)GDISVVYGLR (SEQ ID NO: 168), VDTYDG(beta-D)ISVVYGLR (SEQ ID NO:169).

23. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of an amino acid sequence selected from the group consisting of KCLAECDSIELSYGIK (SEQ ID NO: 141), CLAEIDSC (SEQ ID NO: 142), CFKPLAEIDSIECSYGIK (SEQ ID NO: 143), KPLAEDISIELSYGIK (SEQ ID NO: 145), KPLAEIGDIELSYGIK (SEQ ID NO: 146), KPLAEGDIELSYGIK (SEQ ID NO: 147), KPLAEIELSYGIK (SEQ ID NO: 148), KPLAEIDSIELTYGIK (SEQ ID NO: 149), KPLAEIDGIELSYGIK (SEQ ID NO: 150), KPLAEIDGIELTYGIK (SEQ ID NO: 151), KPLAEIGSIELSYGIK (SEQ ID NO: 152), KGLAEIDSIELSYGIK (SEQ ID NO: 153), KPLAGIDSIGLSYGIK (SEQ ID NO: 154), KCLAEIDSCELSYGIK (SEQ ID NO: 155) and CFKPLAEIDSIEC (SEQ ID NO: 156), or a variant or fragment thereof.

24. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of an amino acid sequence selected from the group consisting of LAEIDSIELSYGIK (SEQ ID NO: 170), AEIDSIELSYGIK (SEQ ID NO: 171), EIDSIELSYGIK (SEQ ID NO: 172), IDSIELSYGIK (SEQ ID NO: 173),

DSIELSYGIK (SEQ ID NO: 174), SIELSYGIK (SEQ ID NO: 175), IELSYGIK (SEQ ID NO: 176), or a variant or fragment thereof.

25. The composition according to claim 1, wherein the peptide or peptide derivative comprises or consists of an amino acid sequence selected from the group consisting of KPLAEIDSIELSYGI (SEQ ID NO: 179), KPLAEIDSIELSYG (SEQ ID NO: 180), KPLAEIDSIELSY (SEQ ID NO: 181), KPLAEIDSIELS (SEQ ID NO: 182), KPLAEIDSIEL (SEQ ID NO: 183), KPLAEIDSIE (SEQ ID NO: 184), or a variant of fragment thereof.

26. The composition according to claim 1, wherein the peptide or peptide derivative is selected from the group consisting of GHK (SEQ ID NO: 188), oxytocin (SEQ ID NO: 186), polymyxin B, LL37 (SEQ ID NO: 187), FOL-199 (SEQ ID NO: 185) and becaplermin.

27. The composition according to any one of the preceding claims, wherein the peptide or peptide derivative is an antimicrobial peptide or peptide derivative.

28. The composition according to any one of the preceding claims, wherein, the peptide or peptide derivative is an anti-inflammatory peptide or peptide derivative.

29. The composition according to any one of the preceding claims, wherein the peptide derivative is a peptide according to any one of the preceding claims, which is conjugated to a moiety, such as a moiety selected from the group consisting of polyethylene glycol (PEG), monosaccharides, fluorophores, chromophores, radioactive compounds, and cell-penetrating peptides.

30. The composition according to any one of the preceding claims, wherein the peptide derivative is a peptide according to any one of the preceding claims, which is modified by being glycosylated or by PEGylation, amidation, esterification, acylation, acetylation and/or alkylation.

31. The composition according to any one of the preceding claims, wherein the peptide derivative is a peptide according to any one of the preceding claims,

which is fused to another polypeptide, such as a polypeptide selected from the group consisting of glutathione-S-transferase (GST) and protein A, or to a tag.

32. The composition according to any one of the preceding claims, wherein the composition is in the form of an ointment, a powder, a spray, a lotion, a gel, foam, a cream, a make-up or a shampoo.

33. The composition according to any one of the preceding claims for use as a medicament.

34. The composition according to any one of the preceding claims for use in the treatment or prevention of a disease or condition associated with hair loss.

35. The composition according to any one of the preceding claims for use in the treatment of dermatological conditions.

36. The composition for use according to claim 35, wherein the dermatological condition is selected from the group consisting of psoriasis, atopic dermatitis, eczema, precarcinogenic states and skin infections.

37. Use of the composition according to any one of claims 1 to 32 for the manufacture of a medicament for treatment or prevention of a disease or condition associated with hair loss or for the treatment of a dermatological condition.

38. A method of manufacturing the composition according to any one of claims 1 to 32 comprising the following steps:

a) mixing the peptide with a saccharide;

b) freeze drying the mixture of a);

c) mixing b) with a lipid and a surfactant;

d) grinding the mixture of c); and

e) optionally mixing the mixture of d) with a lipid and a thickener.