Claims

1. A peptide or a pharmaceutical or cosmetical acceptable salt thereof, the peptide having an amino acid sequence with at least 90% of identity with respect sequence SEQ ID NO: 1 or 2:

$(Trp)_m$-$(Asn)_n$-Lys-Gly-Thr-Ile-Leu-Lys-Ala-Ser-Val-Asp-Tyr-Ile-Arg-Lys-$(Leu)_p$-$(Gln)_q$ (SEQ ID NO: 1)

$(Arg)_{mx}$-$(Arg)_{nx}$-Arg-Arg-Phe-Asn-Ile-Asn-Asp-Arg-Ile-Lys-Glu-Leu-Gly-Thr-Leu-$(Ile)_{px}$-$(Pro)_{qx}$ (SEQ ID NO: 2)

wherein

"m", "n", "p", and "q" represent integers and are selected from 0 and 1;
"m_x", "n_x", "p_x", and "q_x" represent integers and are selected from 0 and 1;
a C-terminal end corresponding to $–C(O)R_4$;
a N-terminal end corresponding to $–NHR_5$;
R_4 is a radical selected from the group consisting of –OH and $–NR_{17}R_{18}$;
R_5 is a radical selected from the group consisting of –H, $(C_1$-$C_{20})$alkyl and $(C_1$-$C_{10})$alkyl substituted by one or more radicals selected from the group consisting of: halogen, $(C_1$-$C_{10})$alkyl, $-OR_6$, $-NR_7R_8$, $-SR_9$, $-SOR_{10}$, $-SO_2R_{11}$, and $-CO_2R_{12}$; and
R_{17} and R_{18} are radicals independently selected from the group consisting of: -H, $(C_1$-$C_{10})$alkyl and $(C_1$-$C_{10})$alkyl substituted by one or more radicals selected from the group consisting of: halogen, $(C_1$-$C_{10})$alkyl, $-OR_6$, $-NR_7R_8$, $-SR_9$, $-SOR_{10}$, $-SO_2R_{11}$, and $-CO_2R_{12}$;

the peptide further including a linker biradical "L" of formula (I)

$$-[(R_1)_a-(R_2)-(R_3)_b]_c- \quad (I)$$

which is connecting an alpha carbon atom of an amino acid located at position "i" with an alpha carbon atom of an amino acid located at position "i+4" or "i+7" in the peptide sequence
wherein
"a" and "b" are the same or different and are 0 or 1;
"c" is comprised from 1 to 10;

R_1 and R_3 are biradicals independently selected from the group consisting of: $(C_1$-$C_{10})$alkyl; $(C_1$-$C_{10})$alkyl substituted by one or more radicals selected from the group consisting of: halogen, $(C_1$-$C_{10})$alkyl, $-OR_6$, $-NR_7R_8$, $-SR_9$, $-SOR_{10}$, $-SO_2R_{11}$, and $-CO_2R_{12}$; $(C_2$-$C_{10})$alkenyl; $(C_2$-$C_{10})$alkenyl substituted by one or more radicals selected from the group consisting of: halogen, $(C_1$-$C_{10})$alkyl, $-OR_6$, $-NR_7R_8$, $-SR_9$, $-SOR_{10}$, $-SO_2R_{11}$, and $-CO_2R_{12}$; $(C_2$-$C_{10})$alkynyl; and $(C_2$-$C_{10})$alkynyl substituted

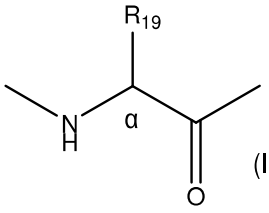
by one or more radicals selected from the group consisting of: halogen, (C_1-C_{10})alkyl, -OR_6, -NR_7R_8, -SR_9, -SOR_{10}, -SO_2R_{11}, and -CO_2R_{12};

R_2 is a biradical selected from the group consisting of: -O-, C(=O), C(=O)NR_{13}, C(=O)O, S(=O), $S(=O)_2$, NR_{14}, (C_1-C_{10})alkyl, (C_2-C_{10})alkenyl, (C_2-C_{10})alkynyl, -NR_{15}-NR_{16}-, -N=N-, -S-S-, and a known ring system comprising from 3 to 14 members, the system comprising from 1 to 3 rings, where:

each one of the rings is saturated, partially unsaturated, or aromatic;
the rings are isolated, partially or totally fused,
each one of the members forming the known ring system is selected from the group consisting of: -CH-, -CH_2-, -NH-, -N-, -SH-, -S-, and -O-; and
the ring system is optionally substituted by one or more radicals independently selected from the group consisting of halogen, -OH, -NO_2, (C_1-C_{10})alkyl, (C_1-C_{10})haloalkyl, and (C_1-C_{10})alkyl-O-; and

R_6, R_7, R_8, R_9, R_{10}, R_{11}, R_{12}, R_{13}, R_{14}, R_{15}, and R_{16} are radicals independently selected from the group consisting of: -H and (C_1-C_{10})alkyl; and

the amino acids which are connected by the linker being of formula (II)



(II)

wherein

R_{19} is a monoradical selected from the group consisting of: (C_1-C_{10})alkyl, (C_2-C_{10})alkenyl, (C_2-C_{10})alkynyl, and a known ring system comprising from 3 to 14 members, the system comprising from 1 to 3 rings, where:
each one of the rings is saturated, partially unsaturated, or aromatic;
the rings are isolated, partially or totally fused,
each one of the members forming the known ring system is selected from the group consisting of: -CH-, -CH_2-, -NH-, -N-, -SH-, -S-, and -O-.

2. The peptide according to claim 1, which has an identity of 100% with respect to sequence SEQ ID NO: 1 or 2.

3. The peptide according to any of the previous claims, wherein the linker biradical of formula (I) is between

an alpha carbon atom of an amino acid located at position “i” in the peptide sequence of sequence SEQ ID NO: 1 and an alpha carbon atom of an amino acid located at position “i+7” in the peptide sequence SEQ ID NO: 1; or, alternatively, is between an alpha carbon atom of an amino acid located at position “i” in the peptide sequence of sequence SEQ ID NO: 2 and an alpha carbon atom of an amino acid located at position “i+7” in the peptide sequence SEQ ID NO: 2.

4. The peptide according to any one of the previous claims, wherein a=b=c=1.

5. The peptide according to any one of the previous claims, wherein
R_1 and R_3 are biradicals independently selected from the group consisting of: $(C_1$-$C_{10})$alkyl; $(C_2$-$C_{10})$alkenyl; and $(C_2$-$C_{10})$alkynyl;
R_2 is a biradical selected from the group consisting of: $(C_1$-$C_{10})$alkyl, $(C_2$-$C_{10})$alkenyl, and $(C_2$-$C_{10})$alkynyl; and
R_{19} is a monoradical selected from the group consisting of: $(C_1$-$C_{10})$alkyl, $(C_2$-$C_{10})$alkenyl, and $(C_2$-$C_{10})$alkynyl.

6. The peptide according to any one of the previous claims, wherein R_1, R_3 and R_{19} are $(C_1$-$C_{10})$alkyl; and R_2 is $(C_2$-$C_{10})$alkenyl.

7. The peptide according to any one of the previous claims, wherein the C-terminal end corresponds to -C(O)OH or $-C(O)NH_2$, and the N-terminal end corresponds to $-NH_2$.

8. The peptide according to any one of the previous claims, which has at least a 85%, at least 90%, at least 95% or it is 100% identical to a peptide sequence SEQ ID NO: 3 to 16, wherein “L”, “R19”, “m”, “n”, “p”, “q”, “mx”, “nx”, “px” and “qx” are as defined in any of the preceding claims.

9. The peptide according to any one of the previous claims, which is a peptide with an amino acid having at least 85%, at least 90%, at least 95% or is 100% identical to an amino acid sequence selected from the group consisting of: SEQ ID NO: 17 to 23.

10. The peptide according to any one of the previous claims, which is conjugated to a label, drug, a cell penetrating peptide or a PROTAC.

11. A pharmaceutical or cosmetical composition comprising a therapeutically or cosmetically effective amount of a peptide or a pharmaceutical or cosmetical acceptable salt thereof as defined in any one of claims 1-10, together with acceptable pharmaceutical or cosmetical excipients and/or carriers.

12. The pharmaceutical or cosmetical composition according to claim 11, which is a topical composition.

13. Use of a peptide or a salt thereof as defined in any one of claims 1-10 or a composition as defined in claim

11 for the preparation of a medicament for regulating melanogenesis, particularly for reducing or increasing the production of melanin.

14. The use as claimed in claim 13, wherein the medicament is for the treatment of hyperpigmentation or hypopigmentation.

15. A peptide or pharmaceutical salt thereof as defined in any one of claims 1-10, or a pharmaceutical composition as defined in claim 11, for use as a medicament.

16. Use of a peptide or a pharmaceutical salt thereof as defined in any one of claims 1-10, or the pharmaceutical composition as defined in claim 11, for the preparation of a medicament for the treatment and/or prevention of cancer, particularly a melanoma cancer, such as a metastatic melanoma cancer.

17. Use of a peptide or pharmaceutical salt thereof as defined in any one of claims 1-10, or the pharmaceutical composition as defined in claim 11, for the preparation of a medicament for the treatment and/or prevention of a disease related to the dysregulation of melanogenesis, particularly by inhibiting cancer melanocytes proliferation.

18. A depigmenting composition comprising a peptide as defined in any one of claims 1-10 and one or more cosmetically acceptable excipients.

19. A pigmenting composition comprising a peptide as defined in any one of claims 1-10 and one or more cosmetically acceptable excipients.

20. The composition as claimed in any one of the claims 18-19, wherein the composition is a topical composition.