regeneration and re-myelination than compared control animals. Moreover, not only histological, but also functional improvement was observed following direct injection of AAT after acute peripheral nerve lesion. Their results indicate that AAT delivered into injured peripheral nerve participate in neural repair.

[006] Cutaneous aging is a complex phenomenon responsible for progressive changes of the skin. Aging of the skin results from two processes: (1) an intrinsic process, corresponding to chronological aging, and (2) an extrinsic process resulting mainly from the deleterious effect of exposure environmental stresses. Genetic, UV exposure, climatic factors (harshness/wind/cold/warm), pollution (chemical, free radicals, contaminant, nitrogen oxide, metals), alcohol consumption or smoking are factors involved in cutaneous aging.

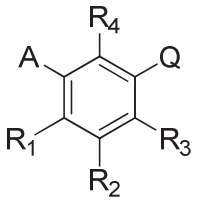
[007] Exposure to irritants compromises the barrier function of the stratum corneum and decreases its ability to protect the skin against environmental stresses (*e.g.,* ultraviolet irradiation, infections agents, etc.). Repeated and prolonged exposition to environmental irritants results in denatured skin proteins, disorganization of the lipid lamellae layers, removal of the protective intercellular lipids, loss of natural moisturizing factors and decreased cohesion between cells. These damages are also responsible for the loss of function of the enzymes responsible for desquamation of corneocytes. There is accentuation of these problems with exposure to pollution, cold, sun, wind, low humidity or chemical agents. An irritant is any agent that is capable of producing cell damage if there exposure for sufficient time and in sufficient concentrations. The severity of the damage is dependent of the type and intensity of exposure to these irritating factors. There are also endogenous factors that make one susceptible to damaged skin by external factors. These factors include having active skin disease such as eczema, inherited dry skin conditions, a previous history of skin disease, sensitive skin and/or older age.

[008] Novel compounds and medicaments are needed to stimulate the tissue self-repair and the tissue regeneration in injured organ.

BRIEF SUMMARY OF THE DISCLOSURE

[009] General embodiments of the disclosure relate to the pharmaceutical use of compounds according to Formula I as defined herein and pharmaceutically acceptable salts thereof.

[009a] In one aspect, there is provided a use of a compound represented by Formula I or a pharmaceutically acceptable salt thereof, or a combination thereof, for the preparation of a medicament for tissue regeneration in a subject in need of tissue regeneration:



Formula I

wherein

A is C_5 alkyl, C_6 alkyl, C_5 alkenyl, C_6 alkenyl, $C(O)-(CH_2)_n-CH_3$ or $CH(OH)-(CH_2)_n-CH_3$ wherein n is 3 or 4;

R_1 is H, F or OH;

R_2 is H, F, OH, C_5 alkyl, C_6 alkyl, C_5 alkenyl, C_6 alkenyl, $C(O)-(CH_2)_n-CH_3$ or $CH(OH)-(CH_2)_n-CH_3$ wherein n is 3 or 4;

R_3 is H, F, OH or CH_2Ph;

R_4 is H, F or OH;

Q is

1) $(CH_2)_mC(O)OH$ wherein m is 1 or 2,
2) $CH(CH_3)C(O)OH$,
3) $C(CH_3)_2C(O)OH$,
4) CH(F)-C(O)OH,
5) CF_2-C(O)OH, or
6) C(O)-C(O)OH.

[009b] In another aspect, there is provided a use of a compound or a pharmaceutically acceptable salt thereof as defined herein, or a combination thereof, for the preparation of a medicament for stimulating the generation of tissue growth in a subject in need of tissue regeneration.

[009b] In another aspect, there is provided a use of a compound or a pharmaceutically acceptable salt thereof as defined herein, or a combination thereof, for the preparation of a medicament for modulating the expression of a tissue regeneration marker in a cell culture or in an organ of a subject, wherein the subject is in need of tissue regeneration, wherein the the tissue regeneration marker is a metalloproteinase or a growth factor.

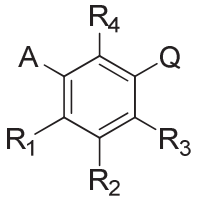
[009c] In another aspect, there is provided a use of the compound or pharmaceutically acceptable salt thereof as defined herein, for the preparation of a medicament for treating aging of skin due to UV exposure, climatic conditions exposure, pollution exposure, alcohol consumption or smoking in a subject in need of an anti-aging treatment of the skin.

[009d] In another aspect, there is provided a use of the compound or pharmaceutically acceptable salt thereof as defined herein, for the preparation of an anti-aging composition for treating skin aging due to UV exposure, climatic conditions exposure, pollution exposure, alcohol consumption or smoking.

[0010] Particular embodiments of the disclosure relates to the use of compounds and compositions for the tissue self-repair and/or the tissue regeneration of an injured organ, and/or for modulating the expression of tissue self-repair markers and/or tissue regeneration markers such as metalloproteinases and growth factors, including without limitation HGF, LOX (Lysyl

CLAIMS:

1. Use of a compound represented by Formula I or a pharmaceutically acceptable salt thereof, or a combination thereof, for the preparation of a medicament for tissue regeneration in a subject in need of tissue regeneration:



Formula I

wherein

A is C_5 alkyl, C_6 alkyl, C_5 alkenyl, C_6 alkenyl, $C(O)-(CH_2)_n-CH_3$ or $CH(OH)-(CH_2)_n-CH_3$ wherein n is 3 or 4;

R_1 is H, F or OH;

R_2 is H, F, OH, C_5 alkyl, C_6 alkyl, C_5 alkenyl, C_6 alkenyl, $C(O)-(CH_2)_n-CH_3$ or $CH(OH)-(CH_2)_n-CH_3$ wherein n is 3 or 4;

R_3 is H, F, OH or CH_2Ph;

R_4 is H, F or OH;

Q is

1) $(CH_2)_mC(O)OH$ wherein m is 1 or 2,
2) $CH(CH_3)C(O)OH$,
3) $C(CH_3)_2C(O)OH$,
4) $CH(F)-C(O)OH$,
5) $CF_2-C(O)OH$, or
6) $C(O)-C(O)OH$.

2. The use of claim 1, wherein A is C_5 alkyl or C_6 alkyl.

3. The use of any one of claims 1 or 2, wherein R_2 is H, F, OH, C_5 alkyl or C_6 alkyl.

4. The use of any one of claims 1 to 3, wherein R_3 is H, OH or CH_2Ph.

5. The use of any one of claims 1 to 4, wherein Q is $(CH_2)_mC(O)OH$ where m is 1 or 2.

12. The use of any one of claims 1-11, wherein the pharmaceutically acceptable salt is sodium.

13. The use of any one of claims 1 to 12, wherein the tissue regeneration occurs in an injured organ or in an injured tissue, and wherein said organ or tissue is kidney, heart, liver, lung, skin, stomach, intestine, muscle or cartilage.

14. Use of a compound or a pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 12, or a combination thereof, for the preparation of a medicament for stimulating the generation of tissue growth in a subject in need of tissue regeneration.

15. Use of a compound or a pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 12, or a combination thereof, for the preparation of a medicament for modulating the expression of a tissue regeneration marker in a cell culture or in an organ of a subject, wherein the subject is in need of tissue regeneration,

16. , wherein the tissue regeneration marker is a metalloproteinase or a growth factor.The use of claim 15, wherein the marker is hepatocyte growth factor (HGF) or Serpin A1 (AAT).

17. Use of the compound or pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 12, for the preparation of a medicament for treating aging of skin due to UV exposure, climatic conditions exposure, pollution exposure, alcohol consumption or smoking in a subject in need of an anti-aging treatment of the skin.

18. Use of the compound or pharmaceutically acceptable salt thereof as defined in any one of claims 1 to 12, for the preparation of an anti-aging composition for treating skin aging due to UV exposure, climatic conditions exposure, pollution exposure, alcohol consumption or smoking.

19. The use of claim 18, further comprising one or more cosmeceutically acceptable vehicles.