TOPICAL FORMULATIONS COMPRISING STRONTIUM AND METHYLSULFONYLMETHANE (MSM) AND METHODS OF TREATMENT

FIELD OF THE INVENTION

[001] The current disclosure relates generally to topical formulations comprising Strontium and Methylsulfonylmethane (MSM) and methods of treatment.

BACKGROUND OF THE INVENTION

[002] Using high concentration of active ingredients in topical cosmetic and medicinal products produce desired results usually when a low pH is used, which may cause side effects, such as irritation, – including stinging, burning, itching, edema, other unpleasant sensations, redness, etc.

SUMMARY

[003] In one example, the disclosure is a topical cosmetic or medicinal formulation comprising: Strontium, Methylsulfonylmethane (MSM) and a dermatologically acceptable carrier.

[004] In another example, the disclosure is a method of cosmetic treatment, comprising topical administration of a topical formulation comprising Strontium, MSM and a dermatologically acceptable carrier.

[005] In still another example, the disclosure is a method of reducing skin irritant effects of a topical cosmetic or medicinal formulation or other chemical irritants, comprising strontium and MSM in the cosmetic or medicinal formulation.

[005a] In one aspect, the present disclosure refers to a topical composition comprising~~:~~ a combination of a strontium~~;~~ salt and methylsulfonylmethane (MSM)~~;~~, and a cosmetically or pharmaceutically acceptable carrier.

[005b] In another aspect, the present disclosure refers to a cosmetic or medicinal product comprising a composition as disclosed herein.

[005c] In another aspect, the present disclosure refers to use of a composition as disclosed herein, for preparing a cosmetic or medicinal product.

[005d] In another aspect, the present disclosure refers to a composition or medicinal product as disclosed herein, for use in medical treatment.

[005e] In another aspect, the present disclosure refers to use of a ~~cosmetic or medicinal product comprising a~~topical composition comprising a combination of strontium~~,~~ salt and methylsulfonylmethane (MSM), and a cosmetically or pharmaceutically acceptable carrier, in the manufacture of a ~~medicament~~ medicinal product for at least one of:

(a) reducing irritation and erythema;

(b) preventing the development of irritation and erythema;

(c) alleviating irritation and erythema associated with a skin disease; or

(d) treating or preventing a sensation, condition or feeling associated with at least one of: (i) topical contact with skin treatment products, skin irritant products or chemicals; (ii) neurogenic inflammations; (iii) skin stinging, itching, burning or erythema associated with change of temperature; or (iv) skin stinging, itching, burning or erythema associated with change of pH.

BRIEF DESCRIPTION OF THE DRAWINGS

[006] The subject matter regarded as the invention is particularly pointed out and distinctly claimed in the concluding portion of the specification. The invention, however, both as to organization and method of operation, together with objects, features, and advantages thereof, may best be understood by reference to the following detailed description when read with the accompanying drawings in which:

[007] Fig. 1 depicts comparative clinical data from Example I showing an effect on skin redness (delta a*) with formulations according to the invention;

CLAIMS

What is claimed is:

1. A topical composition comprising~~:~~ a combination of a strontium~~;~~ salt and methylsulfonylmethane (MSM),~~;~~ and a cosmetically or pharmaceutically acceptable carrier.

2. The topical composition of claim 1, wherein the concentration of the ~~S~~strontium salt is in a range of from 0.1 to 10% w/w.

3. The topical composition of claim 1 or 2, wherein the concentration of ~~m~~Methylsulfonylmethane is in a range of from 0.1 to 20% w/w.

4. The topical composition of any one of claims 1 to 3, wherein the strontium salt is ~~in a form~~ selected from the group consisting of strontium chloride, strontium acetate, strontium nitrate or strontium chloride hexahydrate.

5. The topical composition of any one of claims 1 to 4, further comprising at least one additional active cosmetic ingredient.

6. The topical composition of claim 5, wherein the at least one additional active cosmetic ingredient is at least one of: alpha hydroxy acid (AHA), a beta hydroxy acid (BHA), Retinol, an alpha keto acid, a dicarboxylic acid, arbutin, vitamin C, azelaic acid or glycolic acid.

7. A cosmetic or medicinal product comprising a composition according to any one of claims 1 to 6.

8. The cosmetic or medicinal product of claim 7, comprising one or more of: lactic acid, glycolic acid, mandelic acid, tartaric acid, malic acid, citric acid, salicylic acid, azelaic acid, pyruvic acid, retinol, vitamin C, alpha-arbutin, or beta-arbutin.

9. The cosmetic or medicinal product of claim 7 or 8, formulated as at least one of:

(a) a peel product, comprising at least one of lactic acid glycolic acid or salicylic acid;

(b) a product for treating acne, comprising azelaic acid and/or lactic acid;

(c) a skin-appearance improving product comprising at least one of: (i) azelaic acid in an amount of up to 25%; (ii) vitamin C; or (iii) alpha-arbutin and/or beta-arbutin;

(d) an anti-aging product, comprising retinol;

(e) a mask; or

(f) a soap.

10. The cosmetic or medicinal product of any one of claims 7 to 9, in the form of an ointment, a cream, a lotion, an oil, a solution, an emulsion, a gel, a paste, a milk, an aerosol, a powder, or a foam.

11. Use of a composition according to any one of claims 1 to 6, for preparing a cosmetic or medicinal product.

12. A composition or medicinal product according to any one of claims 1 to 10, for use in medical treatment.

13. Use of a topical ~~cosmetic or medicinal product comprising a~~ composition comprising a combination of strontium salt and~~,~~ methylsulfonylmethane (MSM), and a cosmetically or pharmaceutically acceptable carrier, in the manufacture of a ~~medicament~~ medicinal product for at least one of:

(a) reducing irritation and erythema;

(b) preventing the development of irritation and erythema;

(c) alleviating irritation and erythema associated with a skin disease; or

(d) treating or preventing a sensation, condition or feeling associated with at least one of: (i) topical contact with skin treatment products, skin irritant products or chemicals; (ii) neurogenic inflammations; (iii) skin stinging, itching, burning or erythema associated with change of temperature; or (iv) skin stinging, itching, burning or erythema associated with change of pH.

14. The use of claim 13, wherein the concentration of strontium salt in the composition is in a range of from 0.1 to 10% w/w.

15. The use of claim 13 or 14, wherein the concentration of MSM in the composition is in a range of from 0.1 to 20% w/w.

16. The use of any one of claims 13 to 15, wherein the strontium salt is ~~in a form~~ selected from the group consisting of strontium chloride, strontium acetate, strontium nitrate or strontium chloride hexahydrate.

17. The use of any one of claims 13 to 16, wherein the composition further comprises at least one additional active ingredient.

18. The use of claim 17, wherein the at least one additional active ingredient is at least one of: an alpha hydroxy acid (AHA), a beta hydroxy acid (BHA), retinol, an alpha keto acid, a dicarboxylic acid, arbutin, vitamin C, azelaic acid or glycolic acid.

19. The use of any one of claims 13 to 18, wherein the ~~cosmetic or~~ medicinal product is in the form of an ointment, a cream, a lotion, an oil, a solution, an emulsion, a gel, a paste, a milk, an aerosol, a powder, or a foam.

20. The use of any one of claims 13 to 19, wherein the skin disease or condition is at least one of atopic dermatitis, eczema, seborrhea, rosacea or psoriasis.

21. The use of any one of claims 13 to 20, wherein the sensation, condition or feeling being treated or prevented is at least one of stinging, itching, burning, edema, or erythema.