CLAIMS

What is claimed is:

1. A composition comprising a polyamine synthesis inhibitor, a tyrosinase inhibitor and a corticosteroid, for reducing excess pigmentation.
2. The composition of claim 1, wherein the polyamine synthesis inhibitor is an ornithine decarboxylase (ODC) inhibitor.
3. The composition of claim 2, wherein the ornithine decarboxylase inhibitor is selected from the group consisting of eflornithine, allicin, myricetin, 7,8-dihydroxyflavone, baicalein, and any combination thereof.
4. The composition of any one of claims 1 to 3, wherein the tyrosinase inhibitor is selected from the group consisting of hydroquinone, arbutin, azelaic acid, L-ascorbic acid, ellagic acid, kojic acid, tranexamic acid, and any combination thereof.
5. The composition of any one of claims 1 to 4, wherein the corticosteroid is selected from the group consisting of fluocinolone acetonide, betamethasone, clobetasol, desonide, hydrocortisone, triamcinolone, and any combination thereof.
6. The composition of any one of claims 2 to 5, wherein the concentration of the ornithine decarboxylase inhibitor in the composition is about 0.05% to 15% w/w, the concentration of the tyrosinase inhibitor in the composition is about 1% to 5% w/w, and the concentration of the corticosteroid in the composition is about 0.005% to 0.015% w/w.
7. The composition of any one of claims 2 to 6, wherein the ornithine decarboxylase inhibitor is eflornithine, the tyrosine kinase inhibitor is hydroquinone, and the corticosteroid is fluocinolone acetonide.
8. The composition of claim 7, wherein the concentration of the eflornithine in the composition is about 9.5% to 11.5% w/w.
9. The composition of claim 7, wherein the concentration of the hydroquinone in the composition is about 4% w/w.
10. The composition of claim 7, wherein the concentration of the fluocinolone acetonide in the composition is about 0.01% w/w.
11. The composition of any one of claims 1 to 10, wherein the composition is formulated for topical administration.
12. The composition of claim 11, wherein the composition is formulated as an aqueous hydrogel, an ointment, a cream, or a lotion.
13. The composition of any one of claims 1 to 12, wherein the composition further comprises one or more excipients.

14. Use of a composition comprising a polyamine synthesis inhibitor in the manufacture of a medicament for treating or reducing excess pigmentation in a subject in need thereof, wherein the composition is to be administered to the subject.

15. The use of claim 14, wherein the composition of any one of claims 1 to 13 is to be administered to the subject.

16. The use of claims 14 or 15, wherein the degree of pigmentation is reduced after administration of the composition.

17. The use of claim 16, wherein the degree of pigmentation is assessed using the modified Melasma Area Severity Index (mMASI), Physician Global Assessment (Physician IGA), Patient Global Assessment (Patient IGA) or any combination thereof, wherein after the administration of the composition:

    (i) the mMASI score of the subject is reduced;

    (ii) the Physician IGA score is improved by at least 1 grade;

    (iii) the Patient IGA score is improved by at least 1 grade; or

    (iv) any combination thereof of (i) to (iii).

18. The use of any one of claims 14 to 17, wherein one or more polyamines selected from the group consisting of putrescine, spermidine, spermine, or combinations thereof is reduced in the skin of the subject at the site of administration of the composition.

19. The use of any one of claims 14 to 18, wherein the composition is to be administered to the subject daily.

20. The use of any one of claims 14 to 19, wherein a fingertip unit is to be administered to the subject once daily, preferably at night, for at least 3 months.

21. The use of any one of claims 14 to 20, wherein one or more additional therapies for reducing excess pigmentation is to be further administered to the subject.

22. The use of claim 21, wherein the composition is to be administered to the subject before, after, or at the same time as the further administration of the one or more additional therapies for reducing excess pigmentation.

23. The use of any one of claims 14 to 22, wherein the subject has melasma, solar lentigo, post-inflammatory hyperpigmentation, hyperpigmentation associated with inflammation, infection, aging, ochronosis, or a combination thereof.

24. The composition of any one of claims 1 to 13 for use in therapy.

25. A method of cosmetically reducing excess pigmentation in a subject in need thereof, the method comprising administering a composition comprising a polyamine synthesis inhibitor to the subject.

26. The method of claim 25, comprising administering to the subject the composition of any one of claims 1 to 13.

27. The method of claims 25 or 26, wherein the degree of pigmentation is reduced after administration of the composition.

28. The method of claim 27, wherein the degree of pigmentation is assessed using the modified Melasma Area Severity Index (mMASI), Physician Global Assessment (Physician IGA), Patient Global Assessment (Patient IGA) or any combination thereof, wherein after the administration of the composition:

    (i) the mMASI score of the subject is reduced;

    (ii) the Physician IGA score is improved by at least 1 grade;

    (iii) the Patient IGA score is improved by at least 1 grade; or

    (iv) any combination thereof of (i) to (iii).

29. The method of any one of claims 25 to 28, wherein one or more polyamines selected from the group consisting of putrescine, spermidine, spermine, or combinations thereof is reduced in the skin of the subject at the site of administration of the composition.

30. The method of any one of claims 25 to 29, comprising administering the composition to the subject daily.

31. The method of any one of claims 25 to 30, comprising administering a fingertip unit to the subject once daily, preferably at night, for at least 3 months.

32. The method of any one of claims 25 to 31, further comprising administering to the subject one or more additional cosmetic treatments for reducing excess pigmentation.

33. The method of claim 32, comprising administering the composition to the subject before, after, or at the same time as administering the one or more additional cosmetic treatments for reducing excess pigmentation.

34. The method of any one of claims 25 to 33, wherein the subject has melasma, solar lentigo, post-inflammatory hyperpigmentation, hyperpigmentation associated with inflammation, infection, aging, ochronosis, or a combination thereof.