CLAIMS

1. A topical composition, comprising: minocycline, a magnesium salt, a sulfite compound, and a solvent. Wherein the composition has less than 5% by weight water content.
2. The topical composition of claim 1, wherein the solvent comprises a monohydric aliphatic alcohol, a polyol having from 3-8 carbon atoms, or both.
3. The topical composition of claim 2, wherein the ratio between the monohydric aliphatic alcohol and the polyol is in a range of about 1:1 to 99:1 by weight or is in a range of about 2:1 to 10:1 by weight.
4. The topical composition of any one of claim 1-3, wherein the minocycline is dissolved in the solvent.
5. The topical composition of any one of claims 1-4, wherein the molar ratio of the magnesium salt to the minocycline is in a range of about 2:1 to 100:1.
6. The topical composition of any one of claims 1-5, wherein the magnesium salt is magnesium chloride, or is a magnesium salt having a counter ion that is softer than chloride.
7. The topical composition of any one of claims 1-6, wherein the monohydric aliphatic alcohol is ethanol, isopropanol, propyl alcohol, tert-butyl alcohol, or combinations thereof.
8. The topical composition of any one of claims 1-6, wherein the monohydric aliphatic alcohol is ethanol.
9. The topical composition of any one of claims 1-8, comprising from about 0.1% to about 4% by weight minocycline.
10. The topical composition of any one of claims 1-9, which when stored at 40°C in a closed glass vial for a period of 4 weeks, exhibits an increase in the relative concentration of 4-epi-minocycline of less than 1.0% per week.
11. The topical composition of claim 10, which when stored at 40°C in a closed glass vial for a period of 4 weeks, exhibits an increase in the relative concentration of 4-epi-minocycline of less than 0.70% per week.
12. The topical composition of any one of claims 1-9, which when stored at 25°C and 60% relative humidity in a sealed container for 12 months, contains less than 7% minocycline degradation product, where the degradation product is 4-epi-minocycline.
13. The topical composition of any one of claims 1-12, wherein the polyol is a C3-C8 diol or a triol.
14. The topical composition of claim 13, wherein the polyol is propylene glycol.

15. The topical composition of any one of claims 1-14, wherein the sulfite compound is a sulfite, bisulfite, pyrosulfite, or metabisulfite.
16. The topical composition of claim 15, wherein the sulfite compound is an inorganic sulfite salt comprising an inorganic cation selected from sodium, potassium, calcium and magnesium.
17. The topical composition of any one of claims 1-16 comprising from about 0.005% to about 3.0% by weight of the sulfite compound.
18. The topical composition of claim 17, wherein the sulfite is selected from the group consisting of sodium sulfite, sodium bisulfite, and sodium meta-bisulfite.
19. The topical composition of any one of claims 1-18, further comprising an essential oil.
20. The topical composition of claim 19, comprising 0.01 to 5 weight percent of the essential oil 1,8-cineole.
21. The topical composition of any one of claims 1-20, comprising a thickening agent.
22. The topical composition of claim 21, wherein the thickening agent is hydroxypropyl cellulose.
23. A topical composition comprising a tetracycline-class drug, a magnesium salt, a monohydric aliphatic alcohol and a polyol having from 3-8 carbon atoms, wherein (i) the ratio between the monohydric aliphatic alcohol and the polyol is in a range of 1:1 to 99:1 by weight, (ii) the tetracycline-class drug is dissolved in the topical composition, and (iii) the topical composition has less than 5% by weight water content.
24. A topical composition comprising minocycline, a magnesium salt, a solvent comprising a monohydric aliphatic alcohol and a polyol having from 3-8 carbon atoms, wherein (i) the ratio between the monohydric aliphatic alcohol and the polyol is in a range of 1:1 to 99:1 by weight, and (ii) the minocycline is dissolved in the topical composition.
25. The topical composition of claim 23 or claim 24, wherein the molar ratio of the magnesium salt to the tetracycline-class drug or minocycline, respectively, is in a range of 2:1 to 100:1.
26. The topical composition of any one of claims 23-25, wherein the magnesium salt is magnesium chloride, or is a magnesium salt having a counter ion that is softer than chloride.
27. The topical composition of claim 23, wherein the tetracycline class drug is minocycline or of any one of claims 24-26, wherein upon storage of the composition in a sealed container for 12 months at 25°C and 60% relative humidity, the

composition contains less than 7% minocycline degradation product, where the degradation product is 4-epi-minocycline.

28. The topical composition of any one of claims 23-27, wherein the monohydric aliphatic alcohol is ethanol, isopropanol, propyl alcohol, tert-butyl alcohol, or a combination thereof.

29. The topical composition of any one of claims 23-28, wherein the polyol is a C3-C8 diol or triol.

30. The topical composition of any one of claims 23-29, wherein the polyol is propylene glycol.

31. The topical composition of any one of claims 23-30, further comprising an antioxidant.

32. The topical composition of any one of claims 23 and claims 26-31, wherein the tetracycline class drug is minocycline.

33. The topical composition of any one of claims 23-32, wherein the topical composition does not comprise an emulsion.

34. The topical composition of any one of claims 23-32, wherein the topical composition does not comprise nanoparticles or microparticles.

35. The topical composition of any one of claims 1-34, wherein the composition is hydrophilic.

36. The topical composition of any one of claims 1-22 or 24-35, wherein the molar ratio of the magnesium salt to the minocycline is at least 3:1.

37. The topical composition of any one of claims 1-22 or 24-35, wherein the ratio of the weight of the magnesium salt to the weight of the minocycline is in the range of 1:3 to 3:1.

38. The topical composition of claim 23, wherein the molar ratio of the magnesium salt to the tetracycline class drug is at least 3:1.

39. The topical composition of claim 23, wherein the ratio of the weight of the magnesium salt to the weight of the tetracycline class drug is in the range of 1:3 to 3:1.

40. The topical composition of any one of claims 24-39, wherein the solvent consists of the monohydric aliphatic alcohol and the polyol.

41. The topical composition of any one of claims 24-40, comprising from about 50% by weight to about 95% by weight of the monohydric aliphatic alcohol, from about 5% by weight to about 40% by weight of the polyol, from about 0.1% by weight to about 10% by weight of minocycline, and from about 0.2% by weight to about 15% by weight of the magnesium salt.

42. A topical composition according to any one of claims 1-41 for use in treating a dermatological condition or disease, said composition suitable for application to an exterior epithelial surface of a mammalian body at least once daily for a period of at least 1 week.

43. The topical composition of claim 42, wherein said applying comprises applying the topical composition for a period of at least 1 month.

44. The topical composition of claim 42 or claim 43, wherein the dermatological condition or disease is acne or rosacea and wherein the composition is suitable for application to the skin once or twice daily for a period of 6 to 52 weeks.

45. The topical composition according to claim 42, wherein the dermatological condition of the skin is acne, impetigo or rosacea.

46. The topical composition according to claim 45, wherein the acne is acne vulgaris.

47. The topical composition according to claim 45 or claim 46, wherein composition is suitable for application to an external skin surface from one to three times daily for a period of from about 2 weeks to at least about 6 weeks or until a visible improvement in the dermatological condition or disease is observed.

48. The topical composition of any one of claims 42-47, wherein the composition when applied ex vivo to human facial skin has a penetration efficiency, and where the penetration efficiency multiplied by the concentration of the minocycline or of the tetracycline class drug, respectively, in the topical composition exceeds the minimum inhibitory concentration (MIC) for the drug for a target bacteria in a target tissue or target body fluid.

49. The topical composition of claim 48, wherein the target bacteria is *P. acnes*.

50. The topical composition of claim 48 or claim 49, wherein the penetration efficiency into *ex vivo* human facial skin is equal to or exceeds 5%, or wherein the penetration efficiency into *ex vivo* human facial skin is in the range of 5% to 25%.

51. A method for making a topical composition, the method comprising (i) combining minocycline, a magnesium salt, and a sulfite compound in a solvent to form a mixture, and (ii) agitating the mixture from (i) to form a solution in which the minocycline is dissolved; wherein the composition comprises less than 5% by weight water content.

52. A method for making a topical composition, the method comprising (i) combining a tetracycline-class drug, a magnesium salt, a volatile monohydric aliphatic alcohol, and a polyol having from 3-8 carbon atoms to form a mixture, wherein the ratio between the monohydric aliphatic alcohol and the polyol is in a range of 1:1 to 99:1 by weight, and (ii) agitating the mixture from (i) to form a solution having less than 5% by weight water in which the tetracycline-class drug is dissolved.

53. The method according to claim 52, wherein the tetracycline-class drug is minocycline.

54. A use of a topical composition according to any one of claims 1-41 in the manufacture of a medicament for the treatment of a dermatological condition or disease, said composition is suitable to be applied to an exterior epithelial surface of a mammalian body at least once daily for a period of at least 1 week.

55. The use according to claim 54, wherein said composition is suitable to be applied for a period of at least 1 month.

56. The use according to claim 54 or claim 55, wherein the dermatological condition or disease is acne or rosacea and wherein the composition is suitable to be applied to the skin once or twice daily for a period of 6 to 52 weeks.

57. The use according to claim 54, wherein the dermatological condition of the skin is acne, impetigo or rosacea.

58. The use according to claim 57, wherein the acne is acne vulgaris.