CLAIMS

1. A method of treating allergic conjunctivitis in a patient in need thereof, the method comprising administering to the patient a sustained release biodegradable intracanalicular insert comprising a hydrogel and a glucocorticoid.

2. The method of claim 1, wherein the glucocorticoid comprises dexamethasone.

3. The method of claim 1 or 2, wherein the allergic conjunctivitis is causes or partially caused by a seasonal allergen.

4. The method of claim 1 or 2, wherein the allergic conjunctivitis is causes or partially caused by a perennial allergen.

5. The method of any preceding claim, wherein the allergic conjunctivitis is treated for a time period of up to 2 weeks, up to 4 weeks or up to 6 weeks.

6. The method of any preceding claim, wherein the patient has a positive history of ocular allergies.

7. The method of any preceding claim, wherein the patient has a positive history of positive skin test reaction to perennial and/or seasonal allergens.

8. The method of any preceding claim, wherein the patient has a pre-existing compromised ocular surface.

9. The method of any preceding claim, wherein the patient does not experience an increase or substantial increase in intraocular pressure following administration.

10. The method of any preceding claim, wherein the patient does not experience dacryocanaliculitis following administration.

11. The method of any preceding claim, wherein the insert is preservative-free.

12. The method of any preceding claim, wherein the patient does not have an adverse effect selected from anterior chamber inflammation, increased ocular pressure, reduced visual acuity, cystoid macular edema, corneal edema, eye pain, conjunctival hyperemia or headache.

13. The method of any preceding claim, wherein the ophthalmic insert releases from about 0.3 mg to about 0.5 mg of dexamethasone following administration.

14. The method of any preceding claim, wherein the ophthalmic insert releases about 0.4 mg of dexamethasone following administration.

15. The method of any preceding claim, wherein the ophthalmic insert releases about 0.3 mg to about 0.5 mg or about 0.4 mg of dexamethasone for up to 30 days following administration.

16. The method of any preceding claim, wherein treating comprises a reduction in ocular itching and/or conjunctival redness following administration.

17. The method of any preceding claim, wherein treating comprises a reduction in ocular itching and/or conjunctival redness for at least 15-days following administration.

18. The method of any preceding claim, wherein the allergic conjunctivitis is caused by allergens selected from timothy grass, white birch, meadow fescue, ragweed, Kentucky bluegrass, rye grass, maple, oak, dust mites, cat dander, cockroach, and dog danderThe method of any preceding Claim, wherein the ophthalmic insert releases about 0.4 mg of dexamethasone following administration.

19. The method of any preceding claim, wherein the insert is administered to the inferior and/or superior canaliculus.

20. The method of any preceding claim, wherein the insert is administered to the vertical canaliculus.

21. The method of any preceding claim, wherein the insert is administered bilaterally.

22. The method of any preceding claim, wherein the glucocorticoid is delivered to the ocular surface through the tear film.

23. The method of any preceding claim, wherein the insert releases a therapeutically effective amount of glucocorticoid for a period of up to about 7 days, or up to about 14 days, or up to about 21 days, or up to about 28 days, or up to about 35 days or up to about 42 days.

24. The method of any preceding claim, wherein the insert releases a therapeutically effective amount of glucocorticoid for a period of at least about 7 days, or at least about 14

days, or at least about 21 days, or at least about 28 days, or at least about 35 days or at least about 42 days.

25. The method of any preceding claim, wherein after complete depletion of the glucocorticoid from the insert the insert remains in the canaliculus until the hydrogel has biodegraded and/or is cleared through the nasolacrimal duct.

26. The method of claim 25, wherein the insert remains in the canaliculus for a period of up to about 7 days, or up to about 14 days, or up to about 21 days, or up to about 28 days, or up to about 35 days or up to about 42 days.

27. The method of claim 25, wherein the insert remains in the canaliculus for a period of at least about 7 days, or at least about 14 days, or at least about 21 days, or at least about 28 days, or at least about 35 days or at least about 42 days

28. The method of any preceding claim, comprising the administration of a further sustained release biodegradable intracanalicular insert into the canaliculus while the first insert is still retained in the canaliculus ("insert stacking").

29. The method of claim 28, wherein the further insert is the same or is different from the first insert.

30. The method of claim 28 or 29, wherein the further insert is administered when the first insert has been completely depleted of glucocorticoid.

31. The method of any of claims 28 to 29, wherein the further insert is inserted when the first insert has not yet been completely depleted of glucocorticoid.

32. The method of any preceding claim, wherein the treatment allergic conjunctivitis by the sustained release biodegradable intracanalicular insert is combined with or followed up by another treatment of allergic conjunctivitis.

33. The method of any preceding claim, wherein the hydrogel comprises a polymer network comprising one or more crosslinked polymer units of polyethylene glycol, polyethylene oxide, polypropylene oxide, polyvinyl alcohol, poly (vinylpyrrolidinone), polylactic acid, polylactic-co-glycolic acid, random or block copolymers or combinations or mixtures of any of these, or one or more units of polyaminoacids, glycosaminoglycans, polysaccharides, or proteins.

34. The method of claim 33, wherein the polymer network comprises one or more crosslinked polyethylene glycol units having an average molecular weight in the range from about 2,000 to about 100,000 Daltons, or from about 10,000 to about 60,000 Daltons, or from about 15,000 to about 50,000 Daltons.

35. The method of claim 34, wherein the polyethylene glycol units have an average molecular weight of about 20,000 Daltons.

36. The method of any of claims 33 to 35, wherein the polymer network comprises one or more crosslinked 2- to 10-arm polyethylene glycol units, or one or more 4- to 8-arm polyethylene glycol units.

37. The method of claim 36, wherein the polymer network comprises 4-arm polyethylene glycol units.

38. The method of any of claims 33 to 37, wherein the polymer network is formed by reacting an electrophilic group-containing multi-arm-polymer precursor with a nucleophilic group-containing crosslinking agent.

39. The method of claim 38, wherein the nucleophilic group is an amine group and the electrophilic group is an activated ester group.

40. The method of claim 38 or 39, wherein the electrophilic group-containing multi-arm-polymer precursor is 4a20kPEG-SG and the crosslinking agent is trilysine acetate.

41. The method of any of the preceding claims, wherein the insert comprises a visualization agent.

42. The method of claim 41, wherein the visualization agent is a fluorophore.

43. The method of claim 42, wherein the visualization agent is fluorescein.

44. The method of any of the preceding claims, wherein the insert in a dry state comprises one or more phosphate, borate or carbonate salt(s).

45. The method of any of the preceding claims, wherein the insert is free or substantially free of anti-microbial preservatives.

46. The method of any of the preceding claims, wherein the insert has an essentially cylindrical shape.

47. The method of any of the preceding claims, wherein upon hydration in vivo in the canaliculus or in vitro the average diameter of the insert is increased and optionally its average length is decreased.

48. The method of claim 47, wherein hydration in vitro is measured in phosphate-buffered saline at a pH of 7.4 at 37 °C after 24 hours.

49. A kit comprising one or more sustained release biodegradable intracanalicular insert(s) as disclosed herein and instructions for using the insert(s) for allergic conjunctivitis.

50. The kit according to claim 4, further comprising one or more means for administration of the insert(s).

51. The kit according to claim 49 or 50, wherein the insert(s) is/are individually packaged for a single administration.

52. The kit according to any one of claims 49 to 51, wherein the insert(s) is/are fixated in a foam carrier which is sealed in a foil pouch.

53. The method of any of claims 1-47, wherein the occurrence of increase in intraocular pressure in a population of patients is about 5% or less, about 4% or less, about 3% or less, about 2% or less or about 1% or less.

54. The method of any of claims 1-47, wherein the occurrence of increase in intraocular pressure in a population of patients is about 3.2%.

55. The method of any of claims 1-47 or 53-54, wherein the hydrogel does not worsen ocular itching of the patient.

56. The method of any of claims 1-47 or 53-54, wherein the hydrogel does not change or does not significantly change ocular itching of the patient.

57. The method of any of claims 1-47 or 53-54, wherein the hydrogel lessens ocular itching of the patient.

58. The method of any of claims 1-47 or 53-57, wherein the hydrogel does not worsen conjunctival redness of the patient.

59. The method of any of claims 1-47 or 53-57, wherein the hydrogel does not change or does not significantly change conjunctival redness of the patient.

60. The method of any of claims 1-47 or 53-57, wherein the hydrogel lessens conjunctival redness of the patient.

61. The method of any of claims 1-47 or 53-57, wherein the insert provides a therapeutically effective occular itching score as measured using a modified Conjunctival Allergen Challenge Model.

62. The method of any of claims 1-47 or 53-57, wherein the insert provides an ocular itching score of less than about 2.5 as measured using a modified Conjunctival Allergen Challenge Model.

63. The method of any of claims 1-47 or 53-57, wherein the insert provides an ocular itching score of less than about 2.1 on Day 8 of use when measured at 3 minutes, 5 minutes or 7 minutes post-challenge using a modified Conjunctival Allergen Challenge Model.

64. The method of any of claims 1-47 or 53-57, wherein the insert provides an ocular itching score of about 1.7 to about 2.1 on Day 8 of use when measured at 3 minutes, 5 minutes or 7 minutes post-challenge as measured using a modified Conjunctival Allergen Challenge Model.

65. The method of any of claims 1-47 or 53-57, wherein the insert provides a lower mean ocular itching score as compared to an inert insert at all time points over a one-month duration as measured using a modified Conjunctival Allergen Challenge odel.

66. The method of any of claims 1-47 or 53-57, wherein the insert provides a reduction in ocular itching on Day 8, at 3 minutes, 5 minutes and 7 minutes post challenge as compared to an inert insert using an ocular hyperemia scale.

67. The method of any of claims 1-47 or 53-57, wherein the insert provides a therapeutically effective conjunctival redness score using an ocular hyperemia scale.

68. The method of any of claims 1-47 or 53-57, wherein the insert provides a conjunctival redness score of less than about 2.0 as measured using an ocular hyperemia scale.

69. The method of any of claims 1-47 or 53-57, wherein the insert provides a conjuncitval redness score of less than about 1.8 on Day 8 when measured at 7 minutes, 15 minutes or 20 minutes post insertion using an ocular hyperemia scale.

70. The method of any of claims 1-47 or 53-57, wherein the insert provides a lower mean conjunctival redness score as compared to an inert insert on Day 8 at 7 minutes, 15 minutes or 20 minutes post insertion using an ocular hyperemia scale.

71. The method of any of claims 1-47 or 53-57, wherein the insert provides a reduction in mean conjunctival redness score on Day 15, at 7 minutes, 15 minutes and 20 minutes post insertion as compared to an inert insert using an ocular hyperemia scale.

72. The method of any of claims 1-47 or 53-57, wherein the insert provides a conjuncitval redness score of less than about 1.9 on Day 15 when measured at 7 minutes, 15 minutes or 20 minutes post insertion using an ocular hyperemia scale.

73. The method of any of claims 1-47 or 53-57, wherein the insert provides a lower mean conjunctival redness score as compared to an inert insert at all time points over a 15 day duration using an ocular hyperemia scale.

74. The method of any of claims 1-47 or 53-57, wherein the insert provides a reduction in mean conjunctival redness score on Day 15, at 7 minutes, 15 minutes and 20 minutes post insertion as compared to an inert insert using an ocular hyperemia scale.

75. The method of any of claims 1-47 or 53-57, wherein the insert provides a lower instance of watery eyes as compared to a placebo insert.

CLAIMS

1. A method of treating allergic conjunctivitis in a patient in need thereof, the method comprising administering to the patient a sustained release biodegradable intracanalicular insert comprising a hydrogel and a glucocorticoid, wherein the occurrence of increase in intraocular pressure in a population of patients is about 5% or less.

2. The method of claim 1, wherein the glucocorticoid comprises dexamethasone.

3. The method of claim 1, wherein the insert is preservative-free.

4. The method of claim 2, wherein the ophthalmic insert releases from about 0.3 mg to about 0.5 mg of dexamethasone following administration.

5. The method of claim 2, wherein the ophthalmic insert releases about 0.4 mg of dexamethasone following administration.

6. The method of claim 2, wherein the ophthalmic insert releases about 0.3 mg to about 0.5 mg of dexamethasone for up to 30 days following administration.

7. The method of claim 1, wherein the insert releases a therapeutically effective amount of glucocorticoid for a period of up to about 28 days.

8. The method of claim 1, wherein the insert releases a therapeutically effective amount of glucocorticoid for a period of at least about 28 days.

9. The method of claim 1, wherein the hydrogel comprises a polymer network comprising one or more crosslinked polymer units of polyethylene glycol, polyethylene oxide, polypropylene oxide, polyvinyl alcohol, poly (vinylpyrrolidinone), polylactic acid, polylactic-co-glycolic acid, random or block copolymers or combinations or mixtures of any of these, or one or more units of polyaminoacids, glycosaminoglycans, polysaccharides, or proteins.

10. The method of claim 9, wherein the polymer network comprises one or more crosslinked polyethylene glycol units having an average molecular weight in the range from about 2,000 to about 100,000 Daltons.

11. The method of claim 10, wherein the polyethylene glycol units have an average molecular weight of about 20,000 Daltons.

12. The method of claim 9, wherein the polymer network comprises one or more crosslinked 2- to 10-arm polyethylene glycol units.

13. The method of claim 12, wherein the polymer network comprises 4-arm polyethylene glycol units.

14. The method of claim 9, wherein the polymer network is formed by reacting an electrophilic group-containing multi-arm-polymer precursor with a nucleophilic group-containing crosslinking agent.

15. The method of claim 14, wherein the nucleophilic group is an amine group and the electrophilic group is an activated ester group.

16. The method of claim 14, wherein the electrophilic group- containing multi-arm-polymer precursor is 420kPEG-SG and the crosslinking agent is trilysine acetate.

17. The method of claim 1, wherein the insert comprises a visualization agent.

18. The method of claim 17, wherein the visualization agent is a fluorophore.

19. The method of claim 18, wherein the visualization agent is fluorescein.

20. The method of claim 1, wherein the insert in a dry state comprises one or more phosphate, borate or carbonate salt(s).

21. The method of claim 1, wherein the insert is free or substantially free of anti-microbial preservatives.

22. The method of claim 1, wherein the insert has an essentially cylindrical shape.

23. The method of claim 1, wherein the occurrence of increase in intraocular pressure in a population of patients is about 4%.

24. The method of claim 1, wherein the occurrence of increase in intraocular pressure in a population of patients is about 3.2%.

25. The method of claim 1, wherein the hydrogel lessens ocular itching of the patient.

26. The method of claim 1, wherein the insert provides a therapeutically effective ocular itching score as measured using a modified Conjunctival Allergen Challenge Model.

27. The method of claim 1, wherein the insert provides an ocular itching score of less than about 2.5 as measured using a modified Conjunctival Allergen Challenge Model.

28. The method of claim 1, wherein the insert provides an ocular itching score of less than about 2.1 on Day 8 of use when measured at 3 minutes, 5 minutes or 7 minutes post-challenge using a modified Conjunctival Allergen Challenge Model.

29. The method of claim 1, wherein the insert provides an ocular itching score of about 1.7 to about 2.1 on Day 8 of use when measured at 3 minutes, 5 minutes or 7 minutes post-challenge as measured using a modified Conjunctival Allergen Challenge Model.

30. The method of claim 1, wherein the insert provides a reduction in ocular itching on Day 8, at 3 minutes, 5 minutes and 7 minutes post challenge as compared to an inert insert using an ocular hyperemia scale.