CLAIMS

What is claimed is:

1. A method of treating an individual with a chronic inflammatory condition, comprising:
providing a quantity of θ-defensin or θ-defensin analog as a first aqueous solution comprising the θ-defensin or θ-defensin analog and from 0.5% to 1.5% v/v propylene glycol, wherein the first aqueous solution has a pH of from 5.0 to 7.0; and
administering the first aqueous solution by subcutaneous injection to an individual in need of treatment,
wherein the first aqueous solution is formulated to provide an increase in pharmacologic potency or therapeutic effect of the θ-defensin or θ-defensin analog relative to a second aqueous solution comprising the quantity of θ-defensin or θ-defensin analog in a normal saline solution.

2. The method of claim 1, wherein the aqueous solution further comprises an acetate salt.

3. The method of claim 1 or 2, wherein pharmacodynamic effect of the quantity θ-defensin or θ-defensin analog is increased by at least 10-fold relative to the quantity of the θ-defensin or θ-defensin analog provided in a normal saline solution.

4. The method of one of claims 1 to 3, wherein pharmacodynamic effect of the quantity of the θ-defensin or θ-defensin analog is increased by at least 40-fold relative to the quantity of the θ-defensin or θ-defensin analog provided in a normal saline solution.

5. The method of one of claims 1 to 4, wherein the chronic inflammatory condition is selected from the group consisting of rheumatoid arthritis, inflammatory bowel disease, inflammation associated with cancer, diabetes, and a chronic disease characterized by dysregulated or unresolved chronic inflammation.

6. The method of one of claims 1 to 5, wherein the first aqueous solution comprises the θ-defensin or θ-defensin analog at concentrations of up to 50 $mgmL^{-1}$.

7. The method of one of claims 1 to 6, wherein the θ-defensin analog is selected from the group consisting of a cyclic icosipeptide, a cyclic enneadecapeptide, a cyclic octadecapeptide, a cyclic heptadecapeptide, a cyclic hexadecapeptide, a cyclic pentadecapeptide, a cyclic tetradecapeptide, a cyclic tridecapeptide, a cyclic dodecapeptide, a cyclic hendecapeptide, and a cyclic decapeptide.

8. The method of one of claims 1 to 7, wherein the first aqueous solution comprises 1% v/v propylene glycol and 20mM acetate, and has a pH of 6.0.

9. A method of sterilizing an aqueous θ-defensin preparation, comprising:

providing a θ-defensin or θ-defensin analog in an aqueous buffer comprising the θ-defensin at a concentration of at least 1 $mgmL^{-1}$ and propylene glycol at from 0.5% to 1.5% v/v; and

passing the aqueous buffer through a filter having a pore size of 0.2μm or less.

10. The method of claim 9, wherein the aqueous buffer further comprises an acetate salt.

11. The method of claim 9 or 10, wherein the aqueous θ-defensin preparation has a pH of 5.0 to 7.0.

12. The method of one of claims 9 to 11, wherein the θ-defensin or θ-defensin analog is provided at $50mgmL^{-1}$ or more.

13. A pharmaceutical composition for treatment of a chronic inflammatory condition, comprising:

a θ-defensin or θ-defensin analog at a concentration of up to 50 $mgmL^{-1}$ in an aqueous solution comprising 0.5% to 1.5% v/v propylene glycol,

wherein the pharmaceutical composition has a pH of from 5.0 to 7.0 and is formulated for parenteral administration.

14. The pharmaceutical composition of claim 13, further comprising an acetate salt.

15. The pharmaceutical composition of claim 13 or 14, wherein the concentration of θ-defensin or θ-defensin analog is selected such that pharmacologic potency of the θ-defensin or θ-defensin

analog is increased by at least 10-fold relative to a similar concentration of the θ-defensin or θ-defensin analog provided in a normal saline solution.

16. The pharmaceutical composition of one of claims 13 to 15, wherein the concentration of θ-defensin or θ-defensin analog is selected such that pharmacologic potency of the θ-defensin or θ-defensin analog is increased by at least 40-fold relative to a similar concentration of the θ-defensin or θ-defensin analog provided in a normal saline solution.

17. The pharmaceutical composition of one of claims 13 to 16, wherein the chronic inflammatory condition is selected from the group consisting of rheumatoid arthritis, inflammatory bowel disease, inflammation associated with cancer, diabetes, and a chronic disease characterized by dysregulated or unresolved chronic inflammation.

18. The pharmaceutical composition of one of claims 13 to 17, wherein parenteral administration is selected from the group consisting of subcutaneous injection, intramuscular injection, or intravenous injection.

19. The pharmaceutical composition of one of claims 13 to 18, wherein the θ-defensin analog is selected from the group consisting of cyclic icosipeptide, a cyclic enneadecapeptide, a cyclic octadecapeptide, a cyclic heptadecapeptide, a cyclic hexadecapeptide, a cyclic pentadecapeptide, a cyclic tetradecapeptide, a cyclic tridecapeptide, a cyclic dodecapeptide, a cyclic hendecapeptide, and a cyclic decapeptide.

20. The pharmaceutical composition of one of claims 13 to 19, wherein the pharmaceutical composition comprises 1% v/v propylene glycol and 20mM acetate, and has a pH of 6.0.

21. Use of a composition comprising θ-defensin or θ-defensin analog at up to 50 $mgmL^{-1}$ in an aqueous solution comprising 0.5% to 1.5% v/v propylene glycol for treatment of a chronic inflammatory condition, wherein the composition is formulated for parenteral administration, has a pH of from 5.0 to 7.0, and provides increased pharmacodynamic effect of the θ-defensin relative to a corresponding pharmaceutical composition prepared without propylene glycol.

22. The use of claim 21, wherein the composition further comprises an acetate salt.

23. The use of claim 21 or 22, wherein pharmacologic potency of the θ-defensin or θ-defensin analog is increased by at least 10-fold relative to the θ-defensin or θ-defensin analog provided in a normal saline solution.

24. The use of one of claims 21 to 23, wherein pharmacologic potency of the θ-defensin or θ-defensin analog is increased by at least 40-fold relative to the θ-defensin or θ-defensin analog provided in a normal saline solution.

25. The use of one of claims 21 to 24, wherein the chronic inflammatory condition is selected from the group consisting of rheumatoid arthritis, inflammatory bowel disease, inflammation associated with cancer, diabetes, and a chronic disease characterized by dysregulated or unresolved chronic inflammation.

26. The use of one of claims 21 to 25, wherein parenteral administration is selected from the group consisting of subcutaneous injection, intramuscular injection, or intravenous injection.

27. The use of one of claims 21 to 26, wherein the θ-defensin analog is selected from the group consisting of cyclic icosipeptide, a cyclic enneadecapeptide, a cyclic octadecapeptide, a cyclic heptadecapeptide, a cyclic hexadecapeptide, a cyclic pentadecapeptide, a cyclic tetradecapeptide, a cyclic tridecapeptide, a cyclic dodecapeptide, a cyclic hendecapeptide, and a cyclic decapeptide.

28. The use of one of claims 21 to 27, wherein the composition comprises 1% v/v propylene glycol and 20mM acetate, and has a pH of 6.0.

29. Use of a θ-defensin or θ-defensin analog at up to 50 $mgmL^{-1}$ in an aqueous solution comprising 0.5% to 1.5% v/v propylene glycol for preparation of a composition useful for treatment of a chronic inflammatory condition, wherein the composition is formulated for parenteral administration, has a pH of from 5.0 to 7.0, and provides increased pharmacodynamic effect of the θ-defensin relative to a corresponding pharmaceutical composition prepared without propylene glycol.

30. The use of claim 29, wherein the composition further comprises an acetate salt.

31. The use of claim 29 or 30, wherein pharmacologic potency of the θ-defensin or θ-defensin analog is increased by at least 10-fold relative to the θ-defensin or θ-defensin analog provided in a normal saline solution.

32. The use of one of claims 29 to 31, wherein pharmacologic potency of the θ-defensin or θ-defensin analog is increased by at least 40-fold relative to the θ-defensin or θ-defensin analog provided in a normal saline solution.

33. The use of one of claims 29 to 32, wherein the chronic inflammatory condition is selected from the group consisting of rheumatoid arthritis, inflammatory bowel disease, inflammation associated with cancer, diabetes, and a chronic disease characterized by dysregulated or unresolved chronic inflammation.

34. The use of one of claims 29 to 33, wherein parenteral administration is selected from the group consisting of subcutaneous injection, intramuscular injection, or intravenous injection.

35. The use of one of claims 29 to 34, wherein the θ-defensin analog is selected from the group consisting of cyclic icosipeptide, a cyclic enneadecapeptide, a cyclic octadecapeptide, a cyclic heptadecapeptide, a cyclic hexadecapeptide, a cyclic pentadecapeptide, a cyclic tetradecapeptide, a cyclic tridecapeptide, a cyclic dodecapeptide, a cyclic hendecapeptide, and a cyclic decapeptide.

36. The use of one of claims 29 to 35, wherein the composition comprises 1% v/v propylene glycol and 20mM acetate, and has a pH of 6.0.