CLAIMS

What is claimed is:

1. A pharmaceutical composition comprising:

    a θ-defensin or θ-defensin analog at a concentration of up to 20 $mgmL^{-1}$ in an aqueous solution comprising 0.5% to 1.5% v/v propylene glycol, wherein concentration of propylene glycol is selected to provide the pharmaceutical composition with a viscosity of up to 105 centipoise,

    wherein the pharmaceutical composition has a pH of from 6.0 to 7.0 and is formulated for parenteral administration, and wherein the θ-defensin analog is a cyclic peptide having about 40% or greater sequence identity with a native θ-defensin peptide sequence.

2. The pharmaceutical composition of claim 1, further comprising an acetate salt.

3. The pharmaceutical composition of claim 1 or 2, 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 same or similar concentration of the θ-defensin or θ-defensin analog provided in a normal saline solution.

4. The pharmaceutical composition of any one of claims 1 to 3, 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 same or similar concentration of the θ-defensin or θ-defensin analog provided in a normal saline solution.

5. The pharmaceutical composition of any one of claims 1 to 4, wherein parenteral administration is selected from the group consisting of subcutaneous injection, intramuscular injection, or intravenous injection.

6. The pharmaceutical composition of any one of claims 1 to 5, wherein the θ-defensin analog is selected from the group consisting of cyclic octadecapeptide, a cyclic heptadecapeptide, a cyclic hexadecapeptide, a cyclic pentadecapeptide, and a cyclic tetradecapeptide.

7. The pharmaceutical composition of any one of claims 1 to 6, wherein the pharmaceutical composition comprises 1% v/v propylene glycol and 20mM acetate, and has a pH of 6.5.

8. The pharmaceutical composition of any one of claims 1 to 7 for use as a medicament.

9. Use of the pharmaceutical composition of any one of claims 1 to 4 in the manufacture of a medicament for the treatment of chronic inflammatory condition in a subject, wherein the pharmaceutical composition is to be administered parenterally to the subject.

10. The use of claim 9, 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. 11. The use of any one of claims 10 or 11, wherein parenteral administration is selected from the group consisting of subcutaneous injection, intramuscular injection, or intravenous injection.

12. A method of sterilizing an aqueous preparation comprising a θ-defensin or a θ-defensin analog, comprising:

providing the θ-defensin or the θ-defensin analog in an aqueous buffer comprising the θ-defensin or the θ-defensin analog at a concentration of at least 1 $mgmL^{-1}$ and propylene glycol at from 0.5% to 1.5% v/v, wherein the θ-defensin analog is a cyclic peptide having about 40% or greater sequence identity with a native θ-defensin peptide sequence; and

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

wherein the concentration of propylene glycol is selected to provide the pharmaceutical composition with a viscosity of up to 105 centipoise.

13. The method of claim 12, wherein the aqueous buffer further comprises an acetate salt.

14. The method of claim 12 or 13, wherein the aqueous θ-defensin preparation has a pH of 6.0 to 7.0.

15. The method of any one of claims 12 to 14, wherein the θ-defensin or θ-defensin analog is provided at $10mgmL^{-1}$ or more.