WHAT IS CLAIMED IS:

1. A freeze-dried formulation for the treatment of staphylococcal infections comprising:

an antibacterial protein having killing activity specific to at least one of or all following species: *Staphylococcus arlettae*, *Staphylococcus aureus*, *Staphylococcus auricularis*, *Staphylococcus carnosus*, *Staphylococcus carprae*, *Staphylococcus chromogenes*, *Staphylococcus cohnii*, *Staphylococcus delphini*, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus gallinarum*, *Staphylococcus hemolyticus*, *Staphylococcus hominis*, *Staphylococcus intermedius*, *Staphylococcus kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus muscae*, *Staphylococcus pasteuri*, *Staphylococcus saprophyticus*, *Staphylococcus warneri*, and *Staphylococcus xylosus*, wherein the antibacterial protein is a mixture of a first antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 1 and a second antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 2,

a poloxamer,

a sugar, and

an amino acid.

2. The freeze-dried formulation of claim 1, wherein the concentration of the antibacterial protein in solution before freeze-drying is from 0.1 mg/mL to 30 mg/mL.

3. The freeze-dried formulation of claim 1, wherein the antibacterial protein includes 15-35 mole % of the first antibacterial protein and 65-85 mole % of the second antibacterial protein.

4. The freeze-dried formulation of claim 3, wherein the antibacterial protein includes 25 mole % of the first antibacterial protein and 75 mole % of the second antibacterial protein.

5. The freeze-dried formulation of claim 1, wherein the concentration of the poloxamer in solution before freeze-drying is from 0.1 g/L to 10 g/L.

6. The freeze-dried formulation of claim 1, wherein the poloxamer is poloxamer 188.

7. The freeze-dried formulation of claim 1, wherein the sugar is D-sorbitol.

8. The freeze-dried formulation of claim 1, wherein the concentration of the sugar in solution before freeze-drying is from 1 g/L to 600 g/L.

9. The freeze-dried formulation of claim 1, wherein the amino acid is L-histidine.

10. The freeze-dried formulation of claim 1, wherein the concentration of the amino acid in solution before freeze-drying is from 0.1 g/L to 10 g/L.

11. An antibacterial formulation for the treatment of staphylococcal infections comprising:

an antibacterial protein having killing activity specific to at least one of or all following species: *Staphylococcus arlettae*, *Staphylococcus aureus*, *Staphylococcus auricularis*, *Staphylococcus carnosus*, *Staphylococcus carprae*, *Staphylococcus chromogenes*, *Staphylococcus cohnii*, *Staphylococcus delphini*, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus gallinarum*, *Staphylococcus hemolyticus*, *Staphylococcus hominis*, *Staphylococcus intermedius*, *Staphylococcus kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus muscae*, *Staphylococcus pasteuri*, *Staphylococcus saprophyticus*, *Staphylococcus warneri*, and *Staphylococcus xylosus*,

a poloxamer,

a sugar,

an amino acid, and

water

wherein the antibacterial protein includes a first antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 1 and a second antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 2, and

wherein the concentration of the antibacterial protein is from 0.1 mg/mL to 30 mg/mL.

12. The antibacterial formulation of claim 11, wherein the antibacterial protein includes 15-35 mole % of the first antibacterial protein and 65-85 mole % of the second antibacterial protein.

13. The antibacterial formulation of claim 12, wherein the antibacterial protein includes 25 mole % of the first antibacterial protein and 75 mole % of the second antibacterial protein.

14. The antibacterial formulation of claim 11, wherein the poloxamer is poloxamer 188.

15. The antibacterial formulation of claim 11, wherein the concentration of the poloxamer is from 0.1 g/L to 10 g/L.

16. The antibacterial formulation of claim 11, wherein the sugar is D-sorbitol.

17. The antibacterial formulation of claim 11, wherein the concentration of the sugar is from 1 g/L to 600 g/L.

18. The antibacterial formulation of claim 11, wherein the amino acid is L-histidine.

19. The antibacterial formulation of claim 11, wherein the concentration of amino acid is from 0.1 g/L to 10 g/L.

20. A method for manufacturing a freeze-dried formulation for the treatment of staphylococcal infections comprising:

forming a mixture consisting of an antibacterial protein having killing activity specific to at least one of or all following species: *Staphylococcus arlettae*, *Staphylococcus aureus*, *Staphylococcus auricularis*, *Staphylococcus carnosus*,

Staphylococcus carprae, *Staphylococcus chromogenes*, *Staphylococcus cohnii*, *Staphylococcus delphini*, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus gallinarum*, *Staphylococcus hemolyticus*, *Staphylococcus hominis*, *Staphylococcus intermedius*, *Staphylococcus kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus muscae*, *Staphylococcus pasteuri*, *Staphylococcus saprophyticus*, *Staphylococcus warneri*, and *Staphylococcus xylosus*, wherein the antibacterial protein is a mixture of a first antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 1 and a second antibacterial protein consisting of the amino acid sequence of SEQ. ID. NO: 2; a poloxamer; a sugar; and an amino acid; and

subjecting the mixture to lyophilization.

21. The method according to claim 20, wherein the concentration of the antibacterial protein in the mixture before lyophilization is from 0.1 mg/mL to 30 mg/mL.

22. The method according to claim 20, wherein the antibacterial protein includes 15-35 mole % of the first antibacterial protein and 65-85 mole % of the second antibacterial protein.

23. The method according to claim 22, wherein the antibacterial protein includes 25 mole % of the first antibacterial protein and 75 mole % of the second antibacterial protein.

24. The method according to claim 20, wherein the concentration of the poloxamer in the mixture before lyophilization is from 0.1 g/L to 10 g/L.

25. The method according to claim 20, wherein the poloxamer is poloxamer 188.

26. The method according to claim 20, wherein the sugar is D-sorbitol.

27. The method according to claim 20, wherein the concentration of the sugar in the mixture before lyophilization is from 1 g/L to 600 g/L.

28. The method according to claim 20, wherein the amino acid is L-histidine.

29. The method according to claim 20, wherein the concentration of the amino acid in the mixture before lyophilization is from 0.1 g/L to 10 g/L.