

CLAIMS

1. A product comprising at least two antibiofilm agents, wherein at least one of the antibiofilm agents is an antimicrobial peptide and the at least one other antibiofilm agent is cysteamine, wherein the antimicrobial peptide comprises amino acids according to the formula I:



wherein:

l and m are integers from 1 to 10;

n is an integer from 1 to 10; and

X and Y, which may be the same or different, are independently a hydrophobic or cationic amino acid.

2. The product as claimed in claim 1, wherein the antimicrobial peptide is a first antibacterial peptide.

3. The product as claimed in claim 1 or 2, wherein the antimicrobial peptide comprises between 2 and 200 amino acids.

4. The product as claimed in any one of claims 1 to 3, wherein X, Y, or X and Y are cationic amino acids.

5. The product as claimed in claim 4, wherein X, Y, or X and Y are selected from the group consisting of histidine, arginine, and lysine.

6. The product as claimed in claim 5, wherein X, Y, or X and Y are selected from the group consisting of arginine and lysine.

7. The product as claimed in any one of claims 1 to 6 comprising a synergistically effective amount of (i) a first antibiofilm agent which is a mucolytic agent, and (ii) a second antibiofilm agent which is a second antibacterial peptide.

8. The product as claimed in any one of claims 1 to 7 for use as a disinfectant or biocide.
9. The product as claimed in any one of claims 1 to 7 for use as a medicament.
10. A substrate with the product as claimed in any one of claims 1 to 9 applied or attached.
11. The substrate as claimed in claim 10, wherein the substrate is selected from the group consisting of dressings, medical devices, and indwelling devices.
12. The substrate as claimed in claim 11, wherein the indwelling device is selected from the group consisting of stents, catheters, peritoneal dialysis tubing, draining devices, joint prostheses, and dental implants.
13. The substrate as claimed in any one of claims 10 to 12 for preventing biofilm formation in an environment.
14. The substrate as claimed in any one of claims 10 to 12 for use in preventing biofilm formation in an environment.
15. The substrate as claimed in claim 13 or 14, wherein the environment comprises a biofilm forming microorganism selected from the group consisting of bacteria, fungi, yeast, viruses, and protozoa.
16. The substrate as claimed in claim 15, wherein the biofilm forming microorganism is a bacterium.
17. The substrate as claimed in claim 16, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp., *Staphylococcus* spp., *Haemophilus* spp., *Burkholderia* spp., *Streptococcus* spp., and *Propionibacterium* spp.

18. The substrate as claimed in claim 16, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp. and *Staphylococcus* spp.
19. The substrate as claimed in claim 16, wherein the bacterium is *Pseudomonas aeruginosa*, *Staphylococcus aureus*, or *Staphylococcus epidermidis*.
20. The substrate as claimed in any one of claims 13 to 19, wherein the environment is a mouth.
21. The substrate as claimed in any one of claims 13 to 20 for a prevention of a formation of plaque or caries on a human tooth or a dental implant.
22. A pharmaceutical composition comprising: (i) the product as claimed in any one of claims 1 to 7; and (ii) one or more pharmaceutically acceptable diluents, excipients, or carriers.
23. Use of the product as claimed in any one of claims 1 to 7 in the manufacture of a medicament for the treatment of a microbial infection or a disease associated therewith.
24. The use as claimed in claim 23, wherein the microbial infection or the disease associated therewith is selected from the group consisting of skin and wound infections, middle-ear infections, gastrointestinal tract infections, peritoneal membrane infections, urogenital tract infections, oral soft tissue infections, formation of dental plaque, eye infections, endocarditis, infections in cystic fibrosis, and infections of indwelling medical devices.
25. The product as claimed in any one of claims 1 to 7 for use in the treatment of a microbial infection or a disease associated therewith.
26. The product as claimed in claim 25, wherein the microbial infection or the disease associated therewith is selected from the group consisting of skin and wound infections, middle-ear infections, gastrointestinal tract infections, peritoneal membrane infections, urogenital tract

infections, oral soft tissue infections, formation of dental plaque, eye infections, endocarditis, infections in cystic fibrosis, and infections of indwelling medical devices.

27. An *in vitro* method of preventing biofilm formation in an environment comprising administering to the environment the product as claimed in any one of claims 1 to 7.

28. An *in vitro* method of preventing biofilm formation in an environment comprising administering to the environment the substrate as claimed in any one of claims 10 to 12.

29. The method as claimed in claim 27 or 28, wherein the environment comprises a biofilm forming microorganism selected from the group consisting of bacteria, fungi, yeast, viruses, and protozoa.

30. The method as claimed in claim 29, wherein the biofilm forming microorganism is a bacterium.

31. The method as claimed in claim 30, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp., *Staphylococcus* spp., *Haemophilus* spp., *Burkholderia* spp., *Streptococcus* spp., and *Propionibacterium* spp.

32. The method as claimed in claim 30, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp. and *Staphylococcus* spp.

33. The method as claimed in claim 30, wherein the bacterium is *Pseudomonas aeruginosa*, *Staphylococcus aureus*, or *Staphylococcus epidermidis*.

34. Use of the product as claimed in any one of claims 1 to 7 for preventing biofilm formation in an environment.

35. The use as claimed in claim 34, wherein the environment comprises a biofilm forming microorganism selected from the group consisting of bacteria, fungi, yeast, viruses, and protozoa.

36. The use as claimed in claim 35, wherein the biofilm forming microorganism is a bacterium.
37. The use as claimed in claim 36, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp., *Staphylococcus* spp., *Haemophilus* spp., *Burkholderia* spp., *Streptococcus* spp., and *Propionibacterium* spp.
38. The use as claimed in claim 36, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp. and *Staphylococcus* spp.
39. The use as claimed in claim 36, wherein the bacterium is *Pseudomonas aeruginosa*, *Staphylococcus aureus*, or *Staphylococcus epidermidis*.
40. The use as claimed in any one of claims 34 to 39, wherein the environment is a mouth.
41. The use as claimed in any one of claims 34 to 40 for a prevention of a formation of plaque or caries on a human tooth or a dental implant.
42. The product as claimed in any one of claims 1 to 7 for use in preventing biofilm formation in an environment.
43. The product as claimed in claim 42, wherein the environment comprises a biofilm forming microorganism selected from the group consisting of bacteria, fungi, yeast, viruses, and protozoa.
44. The product as claimed in claim 43, wherein the microorganism is a bacterium.
45. The product as claimed in claim 44, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp., *Staphylococcus* spp., *Haemophilus* spp., *Burkholderia* spp., *Streptococcus* spp., and *Propionibacterium* spp.

46. The product as claimed in claim 44, wherein the bacterium is selected from the group consisting of *Pseudomonas* spp. and *Staphylococcus* spp.
47. The product as claimed in claim 44 wherein the bacterium is *Pseudomonas aeruginosa*, *Staphylococcus aureus*, or *Staphylococcus epidermidis*.
48. The product as claimed in any one of claims 42 to 47, wherein the environment is a mouth.
49. The product as claimed in any one of claims 42 to 48 for a prevention of a formation of plaque or caries on a human tooth or a dental implant.
50. Use of a cysteamine in the manufacture of a medicament for treatment of a microbial infection, wherein the microbial infection is a bacterial infection or a fungal infection.
51. Cysteamine for use in the treatment of a microbial infection, wherein the microbial infection is a bacterial infection or a fungal infection.