

Claims

1. A peptide comprising the amino acid sequence MALPPK, wherein the peptide has fewer than 19 amino acid residues.
2. A peptide consisting of the amino acid sequence MALPPK.
3. A peptide comprising the amino acid sequence CVLPPK, wherein the peptide comprises fewer than 68 amino acid residues.
4. A peptide consisting of the amino acid sequence CVLPPK.
5. A peptide comprising the amino acid sequence HLLPLP, wherein the peptide comprises fewer than 9 amino acid residues.
6. A peptide consisting of the amino acid sequence HLLPLP.
7. A peptide comprising the sequence XX[L or I]PPK, wherein each X independently designates a hydrophobic amino acid, wherein the peptide has fewer than 19 amino acid residues.
8. A peptide consisting of the sequence XX[L or I]PPK, wherein each X independently designates a hydrophobic amino acid.
9. A peptide consisting of the sequence X_1X_2 [L or I]PPK, wherein X_1 is selected from N, C, Q, M, S, and T and wherein X_2 is selected from A, I, L, and V.
10. A peptide comprising or consisting of a sequence selected from the group consisting of LPVPK, ALPK, EVLNCLALPK, LPLP, HLLPLPL, YVPEPF, KYVPEPF, and EMPFKPYVPEPF, wherein the peptide comprises 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20 amino acid residues.
11. The peptide of any one of claims 1 to 10, derived from a probiotic bacteria selected from Lactobacillus, Lactococcus, Streptococcus, Bifidobacterium, Pediococcus and combinations thereof.

12. The peptide of claim 11, wherein the *Lactobacillus* is selected from *Lactobacillus acidophilus* (La-5), *Lactobacillus fermentum*, *Lactobacillus rhamnosus*, *Lactobacillus reuteri*, *Lactobacillus helveticus*, and *Lactobacillus plantarum*.
13. The peptide of claim 11, wherein the *Lactococcus* is *Lactococcus lactis*.
14. The peptide of claim 11, wherein the *Bifidobacterium* is selected from *Bifidobacterium longum*, *Bifidobacterium bifidum*, *Bifidobacterium infantis* and *Bifidobacterium crudilactis* and mixtures thereof.
15. The peptide of claim 11, wherein the *Streptococcus* is *Streptococcus thermophilus*.
16. The peptide of any one of claims 1 to 15, wherein the peptide is combined with one or more of an antiviral, a sugar source, an edible food product, a nutritional supplement and ingestible liquid.
17. The peptide of any one of claims 1 to 16, wherein the peptide is concentrated from a cell-free supernatant or fraction thereof.
18. The peptide of any one of claims 1 to 16, wherein the peptide is provided as a dried culture fraction, such as lyophilized or spray-dried.
19. The peptide of claim 18, wherein the dried culture fraction is a cell-free supernatant.
20. A composition comprising the peptide of any one of claims 1 to 19.
21. The composition of claim 20, wherein the composition is a food product, beverage product, health product, medicament, or nutritional supplement.
22. The composition of claim 20 or 21, wherein the composition comprises live probiotic bacteria from which the peptides are derived.
23. The composition of any one of claims 20 to 22, wherein the composition comprises live probiotic bacteria other than the bacteria from which the peptides are derived.
24. The composition of any one of claims 20 to 23, wherein the peptides in the composition are purified.

25. A method of treating and/or preventing an infection in a subject and/or for reducing the virulence of an infection in a subject, the method comprising administering the peptide of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof.
26. The method of claim 25, wherein the infection is an enteric infection.
27. The method of claim 25, wherein the infection is a non-enteric infection.
28. The method of claim 27, wherein the infection is selected from the group consisting of a urinary tract infection, a vaginal infection, a respiratory tract infection, a stomach infection, a biofilm-producing infection, mastitis, a skin infection, and an oral infection.
29. A method of reducing antibiotic resistance, comprising administering the peptides of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof .
30. The method of claim 29, wherein the method is for reducing antibiotic resistance of MRS.
31. A method of treating MRS, comprising administering the peptides of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof.
32. A method of preventing or disrupting and/or penetrating biofilms, comprising administering the peptides of any one of claims 1 to 17 or the composition of any one of claims 18 to 23 to a subject in need thereof .
33. A method of treating a wound, comprising administering the peptides of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof .
34. A method of reducing attachment of a non-enteric pathogen to tissue of a subject, comprising administering the peptides of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof .
35. An inert object comprising the peptides of any one of claims 1 to 19 or the composition of any one of claims 20 to 24 to a subject in need thereof .

36. The inert object of claim 35, being a stent, catheter, or wound dressing comprising the probiotic molecules, which are released from the object over a period of time.