WHAT IS CLAIMED IS:

1. A probiotic for the prevention or treatment of a condition caused by a target bacterium living in the gastrointestinal tract of a subject, comprising:

a probiotic bacterium, wherein the probiotic bacterium has been transformed to comprise a DNA construct expressing a guided antimicrobial peptide, wherein the sequence coding for the guided antimicrobial peptide comprises the sequence coding for an antimicrobial peptide fused to the sequence coding for a guide peptide that binds to a protein of the target bacterium, wherein the guided antimicrobial peptide kills the target bacterium in the gastrointestinal tract of the subject, and wherein the guided antimicrobial peptide minimally disrupts other bacteria found in the gastrointestinal tract of the subject when compared to unguided antimicrobial peptides or antibiotics.

2. The probiotic of claim 1, wherein the probiotic bacterium comprises a lactic acid bacterium.

3. The probiotic of claim 2, wherein the lactic acid bacterium comprises a *Lactococcus* bacterium.

4. The probiotic of claim 3, wherein the *Lactococcus* bacterium comprises *Lactococcus lactis.*

5. The probiotic of claim 1, wherein the protein of the target bacterium is a virulence factor.

6. The probiotic of claim 5, wherein the virulence factor is the VacA peptide.

7. The probiotic of claim 1, wherein the antimicrobial peptide is laterosporulin, alyteserin, or cathelin-related anti-microbial peptide.

8. The probiotic of claim 1, wherein the target bacterium comprises *H. pylori.*

9. The probiotic of claim 1, wherein the guide peptide has a sequence comprising SEQ ID NO:5.

10. The probiotic of claim 1, wherein the antimicrobial peptide has a sequence comprising SEQ ID NO:6, SEQ ID NO:8, or SEQ ID NO:10.

11. The probiotic of claim 1, wherein the guided antimicrobial peptide has a sequence comprising SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

12. A probiotic composition for the prevention or treatment of a condition caused by *a target bacterium* living in the gastrointestinal tract of a subject, comprising:

the probiotic of claim 1; and

an acceptable excipient or carrier.

13. The probiotic composition of claim 1, wherein the probiotic bacterium is edible, and wherein the acceptable excipient or carrier is edible.

14. A method for preventing or treating a condition in a patient caused by a target bacterium found in the gastrointestinal tract of the subject, comprising:

administering a probiotic composition to the subject, wherein the probiotic composition comprises a probiotic bacterium and an acceptable excipient or carrier, wherein the probiotic bacterium has been transformed to comprise a DNA construct expressing a guided antimicrobial peptide, wherein the sequence coding for the guided antimicrobial peptide comprises the sequence coding for an antimicrobial peptide fused to the sequence coding for a guide peptide that binds to a protein of the target bacterium; and

allowing the guided antimicrobial peptide to kill the target bacterium in the gastrointestinal tract of the subject, and wherein the guided antimicrobial peptide minimally disrupts the other bacteria found in the gastrointestinal tract of the subject when compared to unguided antimicrobial peptides or antibiotics.

15. The method of claim 14, wherein the probiotic bacterium comprises a lactic acid bacterium.

16. The method of claim 15, wherein the lactic acid bacterium comprises a *Lactococcus* bacterium.

17. The method of claim 16, wherein the *Lactococcus* bacterium comprises *Lactococcus lactis.*

18. The method of claim 14, wherein the protein of the target bacterium is a virulence factor.

19. The method of claim 18, wherein the virulence factor is the VacA peptide.

20. The method of claim 14, wherein the antimicrobial peptide is laterosporulin, alyteserin, or cathelin-related anti-microbial peptide.

21. The method of claim 14, wherein the target bacterium comprises *H. pylori.*

22. The method of claim 14, wherein the guide peptide has a sequence comprising SEQ ID NO:5.

23. The method of claim 14, wherein the antimicrobial peptide has a sequence comprising SEQ ID NO:6, SEQ ID NO:8, or SEQ ID NO:10.

24. The method of claim 14, wherein the guided antimicrobial peptide has a sequence comprising SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

25. The method of claim 14, wherein the subject is an animal.

26. The method of claim 14, wherein the subject is a human.

27. The method of claim 14, wherein the probiotic bacterium is edible, and wherein the acceptable excipient or carrier is edible

28. The method of claim 14, wherein the probiotic composition is administered orally.

29. A probiotic for the prevention or treatment of a condition caused by *Helicobacter pylori* living in the gastrointestinal tract of a subject, comprising:

a *Lactococcus lactis* probiotic bacterium, wherein the *Lactococcus lactis* probiotic bacterium has been transformed to comprise a DNA construct expressing a guided antimicrobial peptide, wherein the the sequence coding for the guided antimicrobial peptide comprises the the sequence coding for an antimicrobial peptide fused to the sequence coding for a guide peptide that binds to the VacA peptide of *H. pylori*, wherein the guided antimicrobial peptide kills *H. pylori* in the gastrointestinal tract of the subject, and wherein the guided antimicrobial peptide minimally disrupts other bacteria found in the gastrointestinal tract of the subject when compared to unguided antimicrobial peptides or antibiotics.

30. The probiotic of claim 29 wherein the guide peptide is derived from multimerin-1 sequence.

31. The probiotic of claim 29, wherein the antimicrobial peptide is laterosporulin, alyteserin, or cathelin-related anti-microbial peptide.