CLAIMS:

1. Use of a plant defensin selected from SEQ ID NO:1 through 47 or a functional natural or synthetic derivative or variant thereof or a defensin having at least 80% similarity to any one of SEQ ID NO:1 through 47 after optimal alignment in the manufacture of a medicament for inhibiting infection of a microorganism on or in *in vivo* tissue in or on a subject.

2. The use of Claim 1 wherein the microorganism is a fungus.

3. The use of Claim 1 wherein the microorganism is a bacterium.

4. The use of Claim 1 wherein the infection leads to a condition selected from aspergillosis, *Candida* infection of a mucosal membrane, systemic candidiasis, cryptococcosis, subcutaneous skin layer infection, gastroenteritis, respiratory infection and an infection leading to a sexually transmitted disease.

5. The use of Claim 1 wherein the defensin is coated onto a medical device or condom.

6. The use of Claim 1 wherein the defensin is defined by the consensus amino acid sequence SEQ ID NO:24.

7. The use of Claim 6 wherein the defensin is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3 HX NO: or a functional natural or synthetic derivative or variant thereof which includes a defensin having at least 80% similarity to any one of SEQ ID NO:1, SEQ ID NO:2 and SEQ ID NO:3 after optimal alignment, each with an optional N-terminal alanine.

8. The use of Claim 7 wherein a defensin with an N-terminal alanine is selected from the group consisting of SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27.

9. The use of Claim 1 wherein the defensin variant comprises a Loop1B from a Class I defensin replacing the corresponding Loop1B from a *Solanaceous* Class II defensin.

10. The use of Claim 9 wherein the defensin variant is selected from the list consisting of HXP4, HXP34 and HXP35.

11. The use of Claim 1 wherein the defensin is to be used in synergistic combination with an antimicrobial agent.

12. The use of Claim 11 wherein the antimicrobial agent is a peptide of from about 0.4 to about 12 kD or a proteinase inhibitor.

13. The use of Claim 1 wherein the subject is a human.

14. A topical coating for a medical device or condom comprising a plant defensin selected from SEQ ID NO:1 through 47 or a functional natural or synthetic derivative or variant thereof or a defensin having at least 80% similarity to any one of SEQ ID NO:1 through 50 after optimal alignment.

15. Use of a plant defensin selected from SEQ ID NO:1 through 47 or a functional natural or synthetic derivative or variant thereof or a defensin having at lest 80% similarity to any of SEQ ID NO:1 through 47 after optimal alignment in the manufacture of a medicament for the treatment or prophylaxis of microbial infection on or in an *in vivo* tissue in a human or animal subject.