Claims

1. An isolated multimer of defensin peptides of formula $(U)_nB_mZ_j$, wherein U is a peptide comprising any one of SEQ ID NOS:3-53, 57, or 58, wherein n≥2, m≥1, and j≥0, wherein each B comprises at least one amino acid having at least two amine groups, wherein Z comprises any amino acid, and wherein the multimer is branched at the terminal B_mZ_j residues.

2. The isolated multimer according to claim 1, wherein the peptide U has a charge of +1 to +11.

3. The isolated multimer according to claim 1, wherein each B comprises lysine, ornithine or arginine.

4. The isolated multimer according to claim 1, wherein m=n-1, j=1, B=Z=K, the multimer has the formula $(U)_nK_{n-1}K$, and U comprises any one of SEQ ID NOs: 36 to 44.

5. A method of preparing the multimer according to claim 1 comprising

   (i) providing at least one solid phase;
   (ii) coupling at least a first amino acid Z to the solid phase;
   (iii) linking at least one protected amino acid residue B to the coupled Z;
   (iv) removing the protecting group(s) from the linked B amino acid residue(s)
   (v) providing additional chain extension by linking protected amino acid residues, according to the sequence of the peptide U from the C-terminus to the N-terminus, wherein after each linking, the protecting groups are removed for the next linking;
   (vi) terminating the linking of amino acid residues depending on the number of residues to be added; and
   (vii) optionally, releasing the multimer from the solid phase.

6. The method according to claim 5, further comprising, after step (iv):
   (iv)(a) linking further protected B residues to the linked B residue(s);
   (iv)(b) removing the protecting group(s) from the B residues from (iv)(a);
   (iv)(c) repeating step (iv)(a) and (iv)(b), or
   (iv)(d) proceeding to step (v) and (vi).

7. The method according to claim 5, wherein each B comprises lysine, arginine or ornithine.

8. The method according to claim 5, wherein the peptide U comprises SEQ ID NO: 3 or any one of SEQ ID Nos: 36 to 44.

9. A contact lens solution for coating a device comprising the multimer according to claim 1.

10. A method of preparing a peptide trimer of formula $(U^1)_2BU^1Z$, wherein U^1 comprises any one of SEQ ID NOS: 3-53, 57, or 58, B comprises an amino acid comprising at least two amine groups and Z comprises any amino acid, the method comprising the steps of:
    (i) providing at least one solid phase;
    (ii) coupling at least a first amino acid Z to the solid phase; and
    (iii) providing chain extension of peptide U^1 to Z;
    (iv) linking a protected amino acid B to an amino acid of peptide U^1;
    (v) removing the protecting groups from the linked amino acid B; and
    (vi) providing for chain extension of two peptides U^1 to the amino acid B.

11. An isolated peptide trimer of formula $(U^1)_2BU^1Z$; wherein U^1 comprises any one of SEQ ID NOS: 3-53, 57, or 58; B comprises an amino acid comprising at least two amine groups and Z comprises any amino acid.

12. The isolated multimer according to claim 1, wherein B=Z=K and the multimer has the formula $(U)_nK_mK_j$.

13. The isolated multimer according to claim 1, wherein B=Z=K, m=n-1, j=1 and the multimer has the formula $(U)_nK_{n-1}K_1$.

14. An eye drop solution for coating a device comprising the multimer according to claim 1.

15. An antimicrobial pharmaceutical composition for coating a device comprising the multimer according to claim 1.