We claim:

1. A polypeptide comprising a first fragment and a second fragment, wherein
   (i) the first fragment is a toxin A repeating domain fragment;
   (ii) the second fragment is a toxin B repeating domain fragment;
   (iii) the first fragment has a first proximal end;
   (iv) the second fragment has a second proximal end; and

   wherein the first fragment and the second fragment are separated by less than or exactly 5 amino acids in the primary structure, wherein the polypeptide elicits antibodies that neutralize both toxin A and toxin B, wherein the first proximal end is within a short repeat, the second proximal end is within a short repeat and the first proximal end and the second proximal end do not disrupt short repeat-long repeat-short repeat portions.
2. The polypeptide of claim 1 wherein the polypeptide elicits a protective immune response in a mammalian host against strains of *C.difficile*.
3. The polypeptide of any one of claims 1-2 wherein the first fragment and/or the second fragment comprise less than 25%, 20%, 18% or 15% alpha helical structure.
4. The polypeptide of any preceding claim wherein the first fragment and/or the second fragment comprise more than 25%, 30%, 35%, 38% or 40% beta sheet structure.
5. The polypeptide of any preceding claim wherein the first proximal end is not within amino acids 1878-1940, 2012-2074, 2146-2208, 2258-2322, 2394-2456, 2507-2569 or 2598-2660 of toxin A.
6. The polypeptide of any preceding claim wherein the second proximal end is not within amino acids 1881-1942, 2012-2074, 2144-2208 or 2278-2339 of toxin B.
7. The polypeptide of any preceding claim wherein the first fragment comprises at least 100, 250, 400 or 450 amino acids.
8. The polypeptide of any preceding claim with the second fragment comprises at least 100, 200, 300 or 400 amino acids.
9. The polypeptide of any preceding claim wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A.
10. The polypeptide of any one of claims 1-9 wherein the first proximal end is within amino acids 2700-2710 or 2680-2690 of toxin A.
11. The polypeptide of any preceding claim wherein the second proximal end is within repeat portion I (amino acids 1834-1926) of toxin B.
12. The polypeptide of any preceding claim wherein the second proximal end is within amino acids 1860-1878, 1854-1876.
13. The polypeptide of any one of claims 1-10 wherein the second proximal end is within repeat portion II (amino acids 1927-2057) of toxin B.
14. The polypeptide of any one of claims 1-10 or 13 wherein the second proximal end is within amino acids 1960-1970, 1988-1998 or 1867-1877 of toxin B.
15. The polypeptide of any one of claims 9, 10, 11 or 12 wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A and wherein the second proximal end is within repeat portion I (amino acids 1834-1926) of toxin B.
16. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A and wherein the second proximal end is within repeat portion II (amino acids 1927-2057) of toxin B.
17. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2687-2710) and the second proximal end is within short repeat 4 of repeat portion II of toxin B (amino acids 1988-2007).
18. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 2 of repeat portion VIII (amino acids 2665-2686) of toxin A and the second proximal end is within short repeat 3 of repeat portion II of toxin B (amino acids 1968-1987).
19. The polypeptide of any one of claims 9, 10, 11 or 12 wherein the first proximal is within short repeat 2 of repeat portion VIII of toxin A (amino acids 2665-2686) and the second proximal end is within short repeat 3 of repeat portion I of toxin B (1877-1896).
20. The polypeptide of any one of claims 1-8, 9, 10, 11, 12 and 15 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2645-2686) and the second proximal end is within short repeat 1 of repeat portion I of toxin B (amino acids 1834-1854).

21. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2687-2710) and the second proximal end is within short repeat 4 of repeat portion II of toxin B (amino acids 1988-2007).
22. The polypeptide of claim 16 wherein the first proximal end is within amino acids 2700-2710 of toxin A and the second proximal end is within amino acids 1960-1970 of toxin B.
23. The polypeptide of claims 16 wherein the first proximal end is within amino acids 2680-2690 of toxin A and the second proximal end is within amino acids 1960-1970 of toxin B.
24. The polypeptide of claims 16 wherein the first proximal end is within amino acids 2700-2710 of toxin A and the second proximal end is within amino acids 1988-1998 of toxin B.
25. The polypeptide of claim 16 wherein the first proximal end is within amino acids 2680-2690 and the second proximal end is within amino acids 1860-1878.
26. The polypeptide of any preceding claim wherein the polypeptide is part of a larger fusion protein.
27. The polypeptide of any preceding claim wherein the polypeptide comprises an immunogenic fragment of SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7 SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25 or SEQ ID NO:27.
28. The polypeptide of any preceding claim wherein the polypeptide comprises an immunogenic fragment of at least 500, 600, 700, 750, 800, 850 or 900 amino acids of SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7 SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25 or SEQ ID NO:27.
29. The polypeptide of any preceding claim wherein the polypeptide comprises more than 450, 475, 500, 525, 575, 600, 625, 650, 675, 700, 725, 750, 775, 800, 825 or 850 amino acids from toxin A.
30. The polypeptide of any preceding claim wherein the polypeptide comprises less than 850, 825, 800, 775, 750, 725, 700, 675, 650, 625, or 600 amino acids from toxin A.
31. The polypeptide of any preceding claim wherein the polypeptide comprises more than 350, 375, 400, 425, 450, 475, 500 or 525 amino acids from toxin B.
32. The polypeptide of any preceding claim wherein the polypeptide comprises less than 525, 500, 475, or 450 amino acids from toxin B.
33. A polynucleotide encoding the polypeptide of any one of claims 1-32.
34. A vector comprising the polynucleotide of claim 33 linked to an inducible promoter.
35. An immunogenic composition comprising the polypeptide of any one of claims 1-32 and a pharmaceutically acceptable excipient.
36. The immunogenic composition of claim 35 further comprising an adjuvant.
37. The immunogenic composition of any one of claims 35-36 further comprising additional antigens.
38. The immunogenic composition of claim 37 wherein the additional antigens are antigens derived from a bacterium selected from the group consisting of *S.pneumoniae*, *H.influenzae*, *N.meningitidis*, *E.coli*, *M.cattarhalis*, tetanus, diphtheria, pertussis, *S.epidermidis*, enterococci, and *S.aureus*.
39. A vaccine comprising the immunogenic composition of any one of claims 35-38.
40. A use of the immunogenic composition of any one of claims 35-38 or the vaccine of claim 39 in the treatment or prevention of *C.difficile* disease.
41. The immunogenic composition of any one of claims 35-38 or the vaccine of claim 39 for use in the treatment or prevention of *C.difficile* disease.
42. A use of the immunogenic composition of any one of claims 35-38 or the vaccine of claim 39 in the preparation of a medicament for the prevention or treatment of *C.difficile* disease.

We claim:

1. A polypeptide comprising a first fragment and a second fragment, wherein
   (i) the first fragment is a toxin A repeating domain fragment;
   (ii) the second fragment is a toxin B repeating domain fragment;
   (iii) the first fragment has a first proximal end;
   (iv) the second fragment has a second proximal end; and

   wherein the first fragment and the second fragment are separated by less than or exactly 5 amino acids in the primary structure, wherein the polypeptide elicits antibodies that neutralize both toxin A and toxin B, wherein the first proximal end is within a short repeat, the second proximal end is within a short repeat and the first proximal end and the second proximal end do not disrupt short repeat-long repeat-short repeat portions.
2. The polypeptide of claim 1 wherein the polypeptide elicits a protective immune response in a mammalian host against strains of *C.difficile*.
3. The polypeptide of any one of claims 1-2 wherein the first fragment and/or the second fragment comprise less than 25%, 20%, 18% or 15% alpha helical structure.
4. The polypeptide of any preceding claim wherein the first fragment and/or the second fragment comprise more than 25%, 30%, 35%, 38% or 40% beta sheet structure.
5. The polypeptide of any preceding claim wherein the first proximal end is not within amino acids 1878-1940, 2012-2074, 2146-2208, 2258-2322, 2394-2456, 2507-2569 or 2598-2660 of toxin A.
6. The polypeptide of any preceding claim wherein the second proximal end is not within amino acids 1881-1942, 2012-2074, 2144-2208 or 2278-2339 of toxin B.
7. The polypeptide of any preceding claim wherein the first fragment comprises at least 100, 250, 400 or 450 amino acids.
8. The polypeptide of any preceding claim with the second fragment comprises at least 100, 200, 300 or 400 amino acids.
9. The polypeptide of any preceding claim wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A.
10. The polypeptide of any one of claims 1-9 wherein the first proximal end is within amino acids 2700-2710 or 2680-2690 of toxin A.
11. The polypeptide of any preceding claim wherein the second proximal end is within repeat portion I (amino acids 1834-1926) of toxin B.
12. The polypeptide of any preceding claim wherein the second proximal end is within amino acids 1860-1878, 1854-1876.
13. The polypeptide of any one of claims 1-10 wherein the second proximal end is within repeat portion II (amino acids 1927-2057) of toxin B.
14. The polypeptide of any one of claims 1-10 or 13 wherein the second proximal end is within amino acids 1960-1970, 1988-1998 or 1867-1877 of toxin B.
15. The polypeptide of any one of claims 9, 10, 11 or 12 wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A and wherein the second proximal end is within repeat portion I (amino acids 1834-1926) of toxin B.
16. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within repeat portion VIII (amino acids 2645-2710) of toxin A and wherein the second proximal end is within repeat portion II (amino acids 1927-2057) of toxin B.
17. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2687-2710) and the second proximal end is within short repeat 4 of repeat portion II of toxin B (amino acids 1988-2007).
18. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 2 of repeat portion VIII (amino acids 2665-2686) of toxin A and the second proximal end is within short repeat 3 of repeat portion II of toxin B (amino acids 1968-1987).
19. The polypeptide of any one of claims 9, 10, 11 or 12 wherein the first proximal is within short repeat 2 of repeat portion VIII of toxin A (amino acids 2665-2686) and the second proximal end is within short repeat 3 of repeat portion I of toxin B (1877-1896).
20. The polypeptide of any one of claims 1-8, 9, 10, 11, 12 and 15 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2645-2686) and the second proximal end is within short repeat 1 of repeat portion I of toxin B (amino acids 1834-1854).

21. The polypeptide of any one of claims 9, 10, 13 or 14 wherein the first proximal end is within short repeat 3 of repeat portion VIII of toxin A (amino acids 2687-2710) and the second proximal end is within short repeat 4 of repeat portion II of toxin B (amino acids 1988-2007).
22. The polypeptide of claim 16 wherein the first proximal end is within amino acids 2700-2710 of toxin A and the second proximal end is within amino acids 1960-1970 of toxin B.
23. The polypeptide of claims 16 wherein the first proximal end is within amino acids 2680-2690 of toxin A and the second proximal end is within amino acids 1960-1970 of toxin B.
24. The polypeptide of claims 16 wherein the first proximal end is within amino acids 2700-2710 of toxin A and the second proximal end is within amino acids 1988-1998 of toxin B.
25. The polypeptide of claim 16 wherein the first proximal end is within amino acids 2680-2690 and the second proximal end is within amino acids 1860-1878.
26. The polypeptide of any preceding claim wherein the polypeptide is part of a larger fusion protein.
27. The polypeptide of any preceding claim wherein the polypeptide comprises an immunogenic fragment of SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7 SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25 or SEQ ID NO:27.
28. The polypeptide of any preceding claim wherein the polypeptide comprises an immunogenic fragment of at least 500, 600, 700, 750, 800, 850 or 900 amino acids of SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7 SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25 or SEQ ID NO:27.
29. The polypeptide of any preceding claim wherein the polypeptide comprises more than 450, 475, 500, 525, 575, 600, 625, 650, 675, 700, 725, 750, 775, 800, 825 or 850 amino acids from toxin A.
30. The polypeptide of any preceding claim wherein the polypeptide comprises less than 850, 825, 800, 775, 750, 725, 700, 675, 650, 625, or 600 amino acids from toxin A.
31. The polypeptide of any preceding claim wherein the polypeptide comprises more than 350, 375, 400, 425, 450, 475, 500 or 525 amino acids from toxin B.
32. The polypeptide of any preceding claim wherein the polypeptide comprises less than 525, 500, 475, or 450 amino acids from toxin B.
33. A polynucleotide encoding the polypeptide of any one of claims 1-32.
34. A vector comprising the polynucleotide of claim 33 linked to an inducible promoter.
35. An immunogenic composition comprising the polypeptide of any one of claims 1-32 and a pharmaceutically acceptable excipient.
36. The immunogenic composition of claim 35 further comprising an adjuvant.
37. The immunogenic composition of any one of claims 35-36 further comprising additional antigens.
38. The immunogenic composition of claim 37 wherein the additional antigens are antigens derived from a bacterium selected from the group consisting of *S.pneumoniae*, *H.influenzae*, *N.meningitidis*, *E.coli*, *M.cattarhalis*, tetanus, diphtheria, pertussis, *S.epidermidis*, enterococci, and *S.aureus*.
39. A vaccine comprising the immunogenic composition of any one of claims 35-38.
40. The immunogenic composition of any one of claims 35-38 or the vaccine of claim 39 for use in the treatment or prevention of *C.difficile* disease.
41. A use of the immunogenic composition of any one of claims 35-38 or the vaccine of claim 39 in the preparation of a medicament for the prevention or treatment of *C.difficile* disease.