What is claimed is:

1. A method of forming a chimeric protein, comprising the steps of:

providing a yellow fever virus 17-D envelope protein having SEQ ID No. 1;

providing a dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5; and

substituting one or more of amino acids 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393 of SEQ ID No. 1 with the corresponding amino acid of the selected dengue fever virus envelope protein to create a chimeric envelope protein.

2. The method of claim 1, wherein the substituted amino acids comprise the amino acids proximal to a Domain II fusion loop.

3. The method of claim 2, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.

4. The method of claim 2, wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.

5. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

wherein the chimeric protein is formed from the steps of:

providing a yellow fever virus 17-D envelope protein having SEQ ID No. 1;

providing a dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5; and

substituting one or more of amino acids 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393 of SEQ ID No. 1 with the corresponding amino acid of the selected dengue fever virus envelope protein to create a chimeric envelope protein.

6. A method of creating a treatment composition, comprising the steps of:

providing a portion of an envelope protein from a flavivirus;

providing a dengue fever virus envelope protein selecting from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

substituting a portion of the envelope protein amino acids of the flavivirus with a the corresponding envelope protein amino acids of the selected dengue fever virus to create a chimeric envelope protein;

providing a pharmaceutically acceptable excipient; and

mixing the chimeric envelope protein and the excipient.

7. The method of claim 6, where the flavivirus is selected from the group consisting of West Nile Virus, St. Louis encephalitis, Dengue Fever virus, Japanese encephalitis, Yellow Fever virus, and Kunjin virus.

8. The method of claim 6, wherein the substituted amino acids comprise the amino acids proximal to a fusion loop.

9. The method of claim 6, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.

10. The method of claim 6, wherein the substituted amino acids comprise the amino acids within 14 Å of the fusion loop.

11. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

wherein the chimeric protein is formed from the steps of:

providing a portion of an envelope protein from a flavivirus;

providing a dengue fever virus envelope protein selecting from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

substituting a portion of the envelope protein amino acids of the flavivirus with a the corresponding envelope protein amino acids of the selected dengue fever virus to create a chimeric envelope protein;

providing a pharmaceutically acceptable excipient; and

mixing the chimeric envelope protein and the excipient.

11. A chimeric protein, comprising:

an envelope protein comprised of yellow fever virus 17-D envelope protein having SEQ ID No. 1, wherein selected amino acids of the yellow fever virus 17-D envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5.

12. The chimeric protein of claim 11, wherein the substituted amino acids comprise the amino acids proximal to a Domain II fusion loop.

13. The chimeric protein of claim 11, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.

14. The chimeric protein of claim 11, wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.

15. The chimeric protein of claim 11, wherein one or more of amino acids 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, and 388-393 of SEQ ID No. 1 are substituted with the corresponding amino acids of the selected dengue fever virus envelope protein.

16. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

wherein the chimeric protein comprises:

an envelope protein comprised of yellow fever virus 17-D envelope protein having SEQ ID No. 1, wherein selected amino acids of the yellow fever virus 17-D envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5.

17. A composition for treatment of dengue fever virus, comprising:

a chimeric envelope protein comprised of a flavivirus envelope protein, wherein selected amino acids of the flavivirus envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5; and

a pharmaceutically acceptable excipient.

18. The composition of claim 17, wherein the flavivirus is selected from the group consisting of West Nile Virus, St. Louis encephalitis, Dengue Fever virus, Japanese encephalitis, Yellow Fever virus, and Kunjin virus.

19. The composition of claim 17, wherein the substituted amino acids comprise the amino acids proximal to a fusion loop.

20. The composition of claim 17, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.

21. The composition of claim 17, wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.

22. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

wherein the chimeric protein comprises:

a flavivirus envelope protein, wherein selected amino acids of the flavivirus envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5.

What is claimed is:

1. A method of forming a chimeric protein, comprising the steps of:
   providing a yellow fever virus 17-D envelope protein having SEQ ID No. 1;
   providing a dengue fever virus envelope protein selected from the group consisting of SEQ ID No.2, SEQ ID No. 3, SEQ ID No.4, or SEQ ID No.5; and
   substituting one or more of amino acids 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393 of SEQ ID No. 1 with the corresponding amino acid of the selected dengue fever virus envelope protein to create a chimeric envelope protein.
2. The method of claim 1, wherein the substituted amino acids comprise the amino acids proximal to a Domain II fusion loop.
3. The method of claim 2, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.
4. The method of claim 2, wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.
5. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;
   wherein the chimeric protein is formed from the steps of:
   providing a yellow fever virus 17-D envelope protein having SEQ ID No. 1;
   providing a dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5; and
   substituting one or more of amino acids 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393 of SEQ ID No. 1 with the corresponding amino acid of the selected dengue fever virus envelope protein to create a chimeric envelope protein.
6. A method of creating a treatment composition, comprising the steps of:
   providing a portion of an envelope protein from a flavivirus;
   providing a dengue fever virus envelope protein selecting from the group consisting of SEQ ID No.2, SEQ ID No.3, SEQ ID No.4, or SEQ ID No.5;
   substituting a portion of the envelope protein amino acids of the flavivirus with a the corresponding envelope protein amino acids of the selected dengue fever virus to create a chimeric envelope protein;
   providing a pharmaceutically acceptable excipient; and

mixing the chimeric envelope protein and the excipient.

7. The method of claim 6, where the flavivirus is selected from the group consisting of West Nile Virus, St. Louis encephalitis, Dengue Fever virus, Japanese encephalitis, Yellow Fever virus, and Kunjin virus.
8. The method of claim 6, wherein the substituted amino acids comprise the amino acids proximal to a fusion loop.
9. The method of claim 6, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.
10. The method of claim 6, wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.
11. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

    wherein the chimeric protein is formed from the steps of:

    providing a portion of an envelope protein from a flavivirus;

    providing a dengue fever virus envelope protein selecting from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

    substituting a portion of the envelope protein amino acids of the flavivirus with a corresponding envelope protein amino acids of the selected dengue fever virus to create a chimeric envelope protein;

        wherein the amino acids are at residue 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393, or a combination thereof;

        or wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop;

    providing a pharmaceutically acceptable excipient; and

    mixing the chimeric envelope protein and the excipient.

12. A chimeric protein, comprising:

    an envelope protein comprised of yellow fever virus 17-D envelope protein having SEQ ID No. 1, wherein selected amino acids of the yellow fever virus 17-D envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No.2, SEQ ID No.3, SEQ ID No.4, or SEQ ID No. 5;

wherein the one or more of amino acids is at residue 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393, or a combination thereof;

or wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.

13. The chimeric protein of claim 12, wherein the substituted amino acids comprise the amino acids proximal to a Domain II fusion loop.

14. The chimeric protein of claim 12, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.

15. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

wherein the chimeric protein comprises:

an envelope protein comprised of yellow fever virus 17-D envelope protein having SEQ ID No. 1, wherein selected amino acids of the yellow fever virus 17-D envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

wherein the one or more of amino acids is at residue 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393, or a combination thereof;

or wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.

16. A composition for treatment of dengue fever virus, comprising:

a chimeric envelope protein comprised of a flavivirus envelope protein, wherein selected amino acids of the flavivirus envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

wherein the amino acids are at residue 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393, or a combination thereof;

or wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop; and

a pharmaceutically acceptable excipient.

17. The composition of claim 16, wherein the flavivirus is selected from the group consisting of West Nile Virus, St. Louis encephalitis, Dengue Fever virus, Japanese encephalitis, Yellow Fever virus, and Kunjin virus.
18. The composition of claim 16, wherein the substituted amino acids comprise the amino acids proximal to a fusion loop.
19. The composition of claim 16, wherein the substituted amino acids comprise the amino acids within 5Å of the fusion loop.
20. Use of a chimeric protein in the manufacture of a medicament for the therapeutic and/or prophylactic treatment of dengue fever virus infection;

    wherein the chimeric protein comprises:

    a flavivirus envelope protein, wherein selected amino acids of the flavivirus envelope protein are substituted with corresponding amino acids of dengue fever virus envelope protein selected from the group consisting of SEQ ID No. 2, SEQ ID No. 3, SEQ ID No. 4, or SEQ ID No. 5;

    wherein the amino acids are at residue 1-11, 28-30, 32, 42, 44, 46, 70-81, 95-99, 110-115, 142-147, 149-157, 236-242, 304-324, 333, 335, 337, 350-352, 355, 356, 362-370, 377, 379, 386, 388-393, or a combination thereof;

    or wherein the substituted amino acids comprise the amino acids within 14Å of the fusion loop.