

-continued

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<210> SEQ ID NO 14

<211> LENGTH: 8

<212> TYPE: PRT

<213> ORGANISM: Artificial Sequence

<220> FEATURE:

<223> OTHER INFORMATION: synthetic unrelated peptide negative control

<400> SEQUENCE: 14

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<210> SEQ ID NO 15

<211> LENGTH: 24

<212> TYPE: DNA

<213> ORGANISM: Artificial Sequence

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<223> OTHER INFORMATION: synthetic FLAG tag and enterokinase protease restriction site

<400> SEQUENCE: 15

gactacaagg acgacgatga caag

24

What is claimed is:

1. A fusion protein comprising a Filovirus glycoprotein segment and an immunoglobulin polypeptide segment.

2. The fusion protein of claim 1, wherein the Filovirus glycoprotein segment is an extracellular domain.

3. The fusion protein of claim 1, wherein the Filovirus glycoprotein segment is from an Ebola virus.

4. The fusion protein of claim 3, wherein the Ebola virus is Zaire Ebola virus, Maying a strain.

5. The fusion protein of claim 1, wherein the immunoglobulin polypeptide segment is an immunoglobulin heavy chain constant domain polypeptide.

6. The fusion protein of claim 1, wherein the immunoglobulin is IgG1.

7. The fusion protein of claim 1, further comprising a linker between the Filovirus glycoprotein segment and the immunoglobulin polypeptide segment.

8. The fusion protein of claim 1, which has the sequence as shown in SEQ ID NO: 2.

9. An immunogenic composition comprising the fusion protein of claim 1.

10. The immunogenic composition of claim 9, further comprising an adjuvant.

11. A nucleic acid vector comprising a nucleic acid sequence encoding a fusion protein comprising a Filovirus glycoprotein segment and an immunoglobulin polypeptide segment.

12. The nucleic acid vector of claim 11, wherein the Filovirus glycoprotein segment is an extracellular domain.

13. The nucleic acid vector of claim 11, wherein the Filovirus glycoprotein segment is from Ebola virus.

14. The nucleic acid vector of claim 13, wherein the Ebola virus is Zaire Ebola virus, Maying a strain.

15. The nucleic acid vector of claim 11, wherein the immunoglobulin polypeptide segment is an immunoglobulin heavy chain constant region polypeptide.

16. The nucleic acid vector of claim 11, wherein the immunoglobulin is IgG1.

17. The nucleic acid vector of claim 11, further comprising a nucleic acid sequence encoding a linker between the Filovirus glycoprotein segment and the immunoglobulin polypeptide segment.

18. The nucleic acid vector of claim 11, wherein the nucleic acid sequence encoding the fusion protein has the sequence as shown in SEQ ID NO: 1.

19. A method of inducing a protective immune response against Filovirus infection in a patient, the method comprising administering to the patient an immunologically effective amount of the immunogenic composition of claim 9.

20. The method of claim 19, wherein the immunogenic composition is administered intramuscularly.

21. The method of claim 19, further comprising the step of administering a immunogenic composition comprising a second Filovirus antigen.

22. The method of claim 21, wherein the second antigen is expressed by recombinant viral vector.

23. A method of inducing a protective immune response against Filovirus infection in a patient, the method comprising administering to the patient an immunologically effective amount of a nucleic acid vector of claim 11.

24. A method of detecting an immune response against Filovirus in a patient, the method comprising contacting a biological sample from the patient with the fusion protein of claim 1 and detecting an immune response.

25. The method of claim 24, wherein the step of detecting an immune response includes the step of detecting binding of antibodies in the biological sample to the fusion protein.

26. The method of claim 25, wherein the step of detecting binding of antibodies is carried by ELISA, a chemiluminescence assay, or a fluorescence assay.