CLAIMS:

1. A respiratory syncytial virus (RSV) fusion (F) protein, wherein said RSV F protein consists of~~comprises~~:

(i) a deletion of one or more amino acids of the fusion domain, corresponding to amino acids 137-146 of the wild-type RSV F protein (SEQ ID NO: 2); and

(ii) an inactivated primary furin cleavage site, wherein the primary furin cleavage site corresponds to amino acids 131-136 of the wild-type RSV F protein SEQ ID NO:2, and wherein the inactivation is by mutation.

2. The RSV F protein of claim 1, wherein said RSV F protein comprises a deletion of the amino acids corresponding to amino acids 137-146 of the wild-type RSV F protein (SEQ ID NO: 2).

3. The RSV F protein of claim 1, wherein said inactivation of said primary cleavage site is accomplished by introducing at least one amino acid substitution at a position corresponding to amino acids selected from the group consisting of arginine 133, arginine 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2).

4. The RSV F protein of claim 1, wherein at least two amino acid substitutions are introduced at positions corresponding to amino acids selected from the group consisting of arginine 133, arginine 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2).

5. The RSV F protein of claim 1, wherein three amino acid substitutions are introduced at positions corresponding to amino acids selected from the group consisting of arginine 133, arginine 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2).

6. The RSV F protein of claim 1, wherein at least one amino acid at a position corresponding to amino acids selected from the group consisting of arginine 133, arginine 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2) is replaced with glutamine.

7 The RSV F protein of claim 1, wherein at least two amino acids at positions corresponding to amino acids selected from the group consisting of arginine 133, arginine 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2) are replaced with glutamine.

8. The RSV F protein of claim 1, wherein three amino acids at positions corresponding to amino acids selected from the group consisting of arginine 133, argininc 135, and arginine 136 of the wild-type RSV F protein (SEQ ID NO: 2) are replaced with glutamine.

9. The RSV F protein of claim 1, wherein said RSV F protein comprises the amino acid sequence of SEQ ID NO: 8.

10. The RSV F protein of claim 1, wherein said RSV F protein assumes a lollipop morphology following expression in a host cell.

11. The RSV F protein of claim 1, wherein said RSV F protein exhibits an increase in expression in a host cell as compared to the wild-type RSV F protein (SEQ ID NO: 2).

12. The RSV F protein of claim 1, wherein said RSV F protein exhibits reduced cellular toxicity in a host cell as compared to the wild-type RSV F protein (SEQ ID NO: 2).

13. The RSV F protein of claim 1, wherein said RSV F protein exhibits enhanced immunogenic properties as compared to the wild-type RSV F protein (SEQ ID NO: 2).

14. An isolated nucleic acid encoding a RSV F protein according to claim 1.

15. An isolated cell comprising the nucleic acid of claim 14.

16. A pharmaceutically acceptable vaccine composition comprising a RSV F protein of claim 1, and a pharmaceutically acceptable carrier, wherein the RSV F protein is capable of eliciting an immune response in a host.

17. A purified micelle comprising a RSV F protein according to claim 1.

18. A pharmaceutically acceptable vaccine composition comprising a purified micelle according to claim 17, and a pharmaceutically acceptable carrier, wherein the micelle is capable of eliciting an immune response in a host.

19. A virus-like particle (VLP) comprising a RSV F protein according to claim 1.

20. The vaccine composition of claim 16 further comprising an adjuvant.

21. The vaccine composition of claim 20 wherein the adjuvant is alum.

22. The vaccine composition of claim 18 further comprising an adjuvant.

23. The vaccine composition of claim 22 wherein the adjuvant is alum.

~~24. A respiratory syncytial virus (RSV) fusion (F) protein, wherein the RSV F protein consists of:~~

~~(i) a deletion of one or more amino acids of the fusion domain, corresponding to amino acids 137-146 of the wild-type RSV F protein SEQ ID NO: 2; and~~

~~(ii) an inactivated primary furin cleavage site, wherein the primary furin cleavage site corresponds to amino acids 131-136 of the wild-type RSV F protein SEQ ID NO: 2, and wherein the inactivation is by mutation.~~

~~25~~24. ~~The~~ An RSV F protein ~~of claim 24, wherein said RSV F protein~~ comprising ~~consists of~~ the amino acid sequence of SEQ ID NO: 8.

~~26~~25. A pharmaceutically acceptable vaccine composition comprising the RSV F protein of claim 24, and a pharmaceutically acceptable carrier, wherein the RSV F protein is capable of eliciting an immune response in a host.

~~27~~26. The vaccine composition of claim ~~26~~25 further comprising an adjuvant.

~~28~~27. The vaccine composition of claim ~~27~~26 wherein the adjuvant is alum.

28. A fusion protein comprising the RSV F protein of claim 1 and a heterologous protein.