CLAIMS

What is claimed is:

1. A respiratory syncytial virus (RSV) vaccine comprising a recombinant fusion protein antigen; wherein the recombinant fusion protein antigen comprises:

a phosphoprotein (P) moiety, wherein the P moiety is a polypeptide that shares at least 90% identity to the polypeptide represented by SEQ ID NO 2 or SEQ ID NO 4; and

a flagellin moiety, wherein the flagellin moiety is a polypeptide that shares at least 90% identity to the polypeptide represented by SEQ ID NO 8;

where the P moiety and flagellin moiety are covalently coupled so as to form a linear polypeptide.

2. The RSV vaccine of claim 1, wherein the P moiety is a polypeptide that shares at least 98% identity to the polypeptide represented by SEQ ID NO 2 or SEQ ID NO 4; and wherein the flagellin moiety is a polypeptide that shares at least 98% identity to the polypeptide represented by SEQ ID NO 8.

3. The RSV vaccine of claim 1, wherein the P moiety is a polypeptide that shares at least 99% identity to the polypeptide represented by SEQ ID NO 2 or SEQ ID NO 4; and wherein the flagellin moiety is a polypeptide that shares at least 99% identity to the polypeptide represented by SEQ ID NO 8.

4. The RSV vaccine of claim 1, wherein the P moiety is a polypeptide represented by SEQ ID NO 2 or SEQ ID NO 4; and wherein the flagellin moiety is a polypeptide represented by SEQ ID NO 8.

5. The RSV vaccine of claim 1, wherein the recombinant fusion protein antigen further comprises a first linker coupling the P moiety and flagellin moiety; wherein the first linker is an amino acid or a peptide of two to fifteen amino acids.

6. The RSV vaccine of claim 1, wherein the recombinant fusion protein antigen further comprises a purification tag for facilitating the purification of the recombinant fusion protein

antigen, wherein the purification tag is disposed at either the N-terminal or C-terminal of the recombinant fusion protein antigen.

7. The RSV vaccine of claim 6, wherein the purification tag is composed of six histidine residues.

8. The RSV vaccine of claim 6, wherein the recombinant protein antigen further comprises a second linker linearly coupling the purification tag with the P moiety or flagellin moiety.

9. The RSV vaccine of claim 8, wherein the second linker is a cleavable linker that is composed of an amino acid or a sequence of amino acids which can be cleaved chemically or enzymatically at its C-terminal.

10. The RSV vaccine of claim 1, wherein the recombinant fusion protein antigen is represented by SEQ ID NO 10.