

**RESPIRATORY SYNCYTIAL VIRUS RECOMBINANT FUSION
PROTEIN WITH PRE-FUSION CONFORMATION, PREPARATION
METHOD AND USES THEREOF**

5

ABSTRACT

The present application relates to a respiratory syncytial virus subtype B (RSV-B) recombinant F protein, a polynucleotide encoding the RSV-B recombinant F protein, a nucleic acid construct comprising the polynucleotide, an expression vector comprising the nucleic acid construct, a host cell into which the polynucleotide, the nucleic acid construct, or the expression vector is transformed or transfected, a stabilized trimer formed from the RSV-B recombinant F protein, an immunogenic composition comprising any of the foregoing, and use of any of the foregoing in the preparation of a vaccine for the prevention and/or treatment of respiratory syncytial virus infections. The RSV-B recombinant F protein of the present application comprises at least one epitope specific to the pre-fusion F protein, and can form a stable, pre-fusion conformation of F protein trimer. Furthermore, the RSV-B recombinant F protein of the present application can be expressed stably in a uniform form and with a significantly increased yield. The formed F protein trimer has strong

immunogenicity and thus can stimulate the body to produce a high-level antibody titer, which is of great significance for the clinical treatment and prevention of respiratory syncytial virus.

5 (Figure 22)