PRODUCT INFORMATION

RSV F Protein Extracellular Domain (Strain RSS-2) (recombinant)

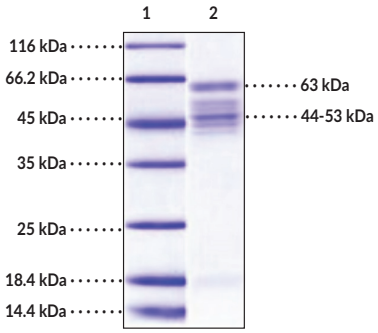
Item No. 37020

Overview and Properties

Synonyms:	Respiratory Syncytial Virus F Protein, Respiratory Syncytial Virus Fusion Protein, RSV Fusion Protein
Source:	Recombinant C-terminal His-tagged RSV F protein extracellular domain expressed in insect cells
Amino Acids:	22-529
Uniprot No.:	P03420
Molecular Weight:	57.8 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, pH 7.4, with 500 mM sodium chloride and 10% glycerol
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Bioactivity:	See figure for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: RSV F Protein Extracellular Domain

SDS-PAGE Analysis of RSV F Protein Extracellular Domain. This protein has a calculated molecular weight of 57.8 kDa. It has an apparent molecular weight of approximately 63 and 44-53 kDa by SDS-PAGE under reducing conditions due to glycosylation.

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Description

Respiratory syncytial virus (RSV) fusion (F) protein is a surface glycoprotein encoded by the *F* gene in RSV RNA.[1] It is synthesized as an inactive precursor protein, F_0, that undergoes proteolytic cleavage to release the F_1 and F_2 subunits, which are joined together by two disulfide bonds.[2] Mature RSV F protein is composed of an N-terminal fusion peptide (FP), two heptad repeats (HRs), a transmembrane domain, and a cytoplasmic tail and assembles into homotrimers on the virus surface.[1] Upon insertion of the FP in the target cell membrane, the HRs form a six-helical bundle (6-HB) that enables RSV to fuse with the target cell. RSV F protein is highly conserved between RSV subtypes A and B with approximately 90% amino acid identities.[3] RSV is the most common causative agent of pediatric lower respiratory tract infections.[4] Cayman's RSV F Protein Extracellular Domain (Strain RSS-2) (recombinant) protein consists of 519 amino acids, has a calculated molecular weight of 57.8 kDa, and a predicted N-terminus of Phe22 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the F_0 and F_1 proteins is approximately 63 and 44-53 kDa, respectively, due to glycosylation.

References

1. Graham, B.S. and Anderson, L.J. Challenges and opportunities for respiratory syncytial virus vaccines. *Curr. Top. Microbiol. Immunol.* **372**, 391-404 (2013).
2. Day, N.D., Branigan, P.J., Liu, C., *et al.* Contribution of cysteine residues in the extracellular domain of the F protein of human respiratory syncytial virus to its function. *Virol. J.* **3**, 34 (2006).
3. Choi, S.-H., Park, K.S., and Kim, Y.-J. Analysis of respiratory syncytial virus fusion protein from clinical isolates of Korean children in palivizumab era, 2009-2015. *J. Infect. Chemother.* **25(7)**, 514-519 (2019).
4. Nair, H., Nokes, D.J., Gessner, B.D., ***et al.*** Global burden of acute lower respiratory infections due to respiratory syncytial virus in young children: A systematic review and meta-analysis. *Lancet* **375(9725)**, 1545-1455 (2010).

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