# Product Information Sheet for NR-59413

## Glycoprotein F (+) Fd THS DS-Cav1 from Respiratory Syncytial Virus (RSV) A2, with C-Terminal Histidine Tag, Recombinant from HEK293F Cells

## Catalog No. NR-59413

This reagent is the tangible property of the U.S. Government.

**For research use only. Not for use in humans.**

### Contributor:

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### Manufacturer:

BEI Resources

### Product Description:

NR-59413 was produced from an expression vector (BEI Resources NR-55425), encoding Respiratory Syncytial Virus A2 (RSV A2) recombinant prefusion F glycoprotein variant DS-Cav1.[1] The construct consists of synthesized, mammalian codon-optimized RSV F(+) residues 1 to 513 [containing two sets of mutations: S155C AND S290C (DS) and S190F-V207L (Cav1)], a C-terminal T4 fibritin trimerization motif, thrombin cleavage site, hexa-histidine tag, and Strep-tag®II.[1] The RSV F (+) variant is derived from A2 strain (GenPept: P03420) with three naturally occurring substitutions (P102A, I379V and M447V) for enhanced protein expression.[1] The recombinant protein was expressed in human embryonic kidney HEK293F cells and purified by nickel affinity chromatography. The predicted protein sequence is shown in Figure 1. NR-59413 comprises 568 amino acids with a theoretical molecular weight of 63,146 daltons.

### Material Provided:

Each vial contains approximately 96 µg of purified recombinant protein in sterile 18 mM Tris-HCl (pH 7.5), 225 mM NaCl and 10% glycerol. The concentration, expressed as mg/mL, is shown on the Certificate of Analysis.

### Packaging/Storage:

Purified recombinant RSV protein was packaged aseptically, in screw-capped plastic cryovials. This product is provided on dry ice and should be stored at -20°C immediately upon arrival.

### Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Glycoprotein F (+) Fd THS DS-Cav1 from Respiratory Syncytial Virus (RSV) A2, with C-Terminal Histidine Tag, Recombinant from HEK293F Cells, NR-59413."

### Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories (BMBL). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

### Disclaimers:

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### References:

1. McLellan, J. S. et al. "Structure-Based Design of a fusion Glycoprotein vaccine for Respiratory Syncytial Virus." Science 342 (2013): 592-598. PubMed: 24179220.
2. McLellan, J. S. et al. "Structure of RSV Fusion Glycoprotein Trimer Bound to a Prefusion-Specific Neutralizing Antibody." Science 340 (2013): 1113-11137. PubMed: 23618766.
3. McLellan, J. S., W. C. Ray and M. E. Peeples. "Structure and Function of Respiratory Syncytial Virus Surface Glycoproteins." Curr. Top. Microbiol. Immunol. 372 (2013) 83-104. PubMed: 24362685.

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**Figure 1: Predicted Protein Sequence**

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  1 MELLILKANA ITTILTAVTF CFASGQNITE EFYQSTCSAV SKGYLSALRT
 51 GWYTSVITIE LSNIKENKCN GTDAKVKLIK QELDKYKNAV TELQLLMQST
101 PATNNRARRE LPRFMNYTLN NAKKTNVTLS KKRKRRFLGF LLGVGSAIAS
151 GVAVCKVLHL EGEVNKIKSA LLSTNKAVVS LSNGVSVLTF KVLDLKNYID
201 KQLLPILNKQ SCSISNIETV IEFQQKNNRL LEITREFSVN AGVTTPVSTY
251 MLTNSELLSL INDMPITNDQ KKLMSNNVQI VRQQSYSIMC IIKEEVLAYV
301 VQLPLYGVID TPCWKLHTSP LCTTNTKEGS NICLTRTDRG WYCDNAGSVS
351 FFPQAETCKV QSNRVFCDTM NSLTLPSEVN LCNVDIFNPK YDCKIMTSKT
401 DVSSSVITSL GAIVSCYGKT KCTASNKNRG IIKTFSNGCD YVSNKGVDTV
451 SVGNTLYYVN KQEGKSLYVK GEPIINFYDP LVFPSDEFDA SISQVNEKIN
501 QSLAFIRKSD ELLSAIGGYI PEAPRDGQAY VRKDGEWVLL STFLGGLVPR
551 GSHHHHHHSA WSHPQFEK
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Glycoprotein F (+) Fd THS DS-Cav1 – **Residues 1 to 513** [represents amino acid residues 1 to 513 (GenPept: P03420)]
Plasmid-derived amino acids – Residues 514 to 517, 545 to 546 and 559 to 560
SS TO CC (DS) mutations – **Residues 155 and 290**
S190F and V207L mutations (Cav1) – **Residues 190 and 207**
Naturally occurring substitutions (P102A, I379V and M447V) – **Residues 102**, **379** and **447**
Trimerization foldon domain - 518 to 544
Thrombin cleavage site - Residues 547 to 552
Hexa-histidine tag - Residues 553 to 558
Strep-tag®II - Residues 561 to 568

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