

**Glycoprotein F (dFP) from Human Respiratory Syncytial Virus (RSV), A2 with C-Terminal Histidine Tag, Recombinant from HEK293F Cells**

**Catalog No. NR-59414**

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

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

**Contributor:**

Barney Graham, M. D., Ph.D., Deputy Director and Chief, Vaccine Research Center, National Institutes of Health, Bethesda, Maryland, USA

**Manufacturer:**

BEI Resources

**Product Description:**

NR-59414 was produced from an expression vector (BEI Resources NR-55426), encoding the human respiratory syncytial virus (RSV), A2 recombinant postfusion F glycoprotein variant.<sup>1</sup> The protein construct consists of synthesized, mammalian codon-optimized RSV F, [residues 1 to 513 with fusion peptide residues 137 to 146 deleted (dFP)], with a C-terminal human rhinovirus (HRV) 3C site, octa-histidine tag, and Strep-tag<sup>®</sup>II.<sup>1</sup> The RSV F variant is derived from an A2 strain (GenPept: [P03420](#)) with three naturally occurring substitutions (P102A, I379V and M447V) for enhanced protein expression.<sup>1</sup> The recombinant protein was expressed in human embryonic kidney HEK293F cells and purified by affinity chromatography. The predicted protein sequence is shown in Figure 1. NR-59414 comprises 530 amino acids with a theoretical molecular weight of 59,148 daltons.

**Material Provided:**

Each vial contains approximately 100 µg to 500 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 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 (dFP) from Human Respiratory Syncytial Virus (RSV), A2 with C-Terminal Histidine Tag, Recombinant from HEK293F Cells, NR-59414.”

**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). Current Edition. Washington, DC: U.S. Government Printing Office.

**Disclaimers:**

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at [www.beiresources.org](http://www.beiresources.org).

While BEI Resources makes reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC<sup>®</sup> nor the U.S. Government makes any warranties or representations regarding its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC<sup>®</sup> nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC<sup>®</sup> and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC<sup>®</sup>, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

**Use Restrictions:**

**This material is distributed for internal research, non-commercial purposes only.** This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

**References:**

1. McLellan, J. S., et al. “Structure of Respiratory Syncytial Virus Fusion Glycoprotein in the Postfusion Conformation Reveals Preservation of Neutralizing Epitopes.” *J. Virol.* 85 (2011): 7788-7796. PubMed: 21613394.
2. 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.

ATCC<sup>®</sup> is a trademark of the American Type Culture Collection.



Figure 1: Predicted Protein Sequence

```

1    MELLILKANA ITTILTAVTF CFASGQNITE EFYQSTCSAV SKGYLSALRT
51   GWYTSVITIE LSNIKENKCN GTDAKVKLIK QELDKYKNAV TELQLLMQST
101  PATNNRARRE LPRFMNYTLN NAKKTNVTLS KKRKRRAIAS GVAVSKVLHL
151  EGEVNKIKSA LLSTNKAVVS LSNQVSVLTS KVLDLKNYID KQLLPVKNKQ
201  SCSISNIETV IEFQQKNNRL LEITREFSVN AGVTTTPVSTY MLTNSELLSL
251  INDMPITNDQ KKLMSNNVQI VRQQSYSIMS IIKEEVLAYV VQLPLYGVID
301  TPCWKLHTSP LCTTNTKEGS NICLTRTRDRG WYCDNAGSVS FFPQAETCKV
351  QSNRVFCDTM NSLTLPSEVN LCNVDIFNPK YDCKIMTSKT DVSSSVITSL
401  GAIVSCYGKT KCTASNKNRG IIKTFSNGCD YVSNKGVDTV SVGNTLYYVN
451  KQEGKSLYVK GEPIINFYDP LVFPSDEFDA SISQVNEKIN QSLAFIRKSD
501  ELLGLEVLFO  GPHHHHHHHH SAWSHPOFEK
  
```

**Glycoprotein F (dFP) – Residues 1 to 503** [represents amino acid residues 1 to 513 (GenPept: [P03420](#))]

Plasmid-derived amino acids – Residue 504, 521 and 522

Naturally occurring substitutions (P102A, I379V and M447V) – **Residues 102, 369 and 437**

HRV 3C protease tag – Residues 505 to 512

Octa-histidine tag – Residues 513 to 520

Strep-tag®II – Residues 523 to 530