Vector paH Containing Human Respiratory Syncytial Virus (RSV), A2 Recombinant Fusion Glycoprotein dFP Gene (Postfusion)

Catalog No. NR-55426

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For research use only. Not for use in humans.

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Manufacturer:

BEI Resources

Product Description:

NR-55426 is an expression vector encoding human respiratory syncytial virus (RSV), A2 recombinant postfusion F glycoprotein variant. 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®II.[1,2] The RSV F variant is derived from A2 strain (GenPept: P03420) with three naturally occurring substitutions (P102A, I379V and M447V) for enhanced protein expression.[2] The mammalian expression vector backbone pαH, is derived from vector pLEXm and contains the beta-lactamase gene, *bla*, to provide transformant selection through ampicillin resistance in *Escherichia coli (E. coli)*.[3] The plasmid is approximately 6140 base pairs, and the complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

The conformational diversity of RSV F glycoprotein poses a major challenge in the design of effective subunit vaccines against RSV. Expression systems producing recombinant RSV F proteins in diverse conformational states are important tools to dissect the antibody response to natural RSV infection and following vaccination.[4] dFP is reported to be efficiently cleaved into F2 and F1 subunits consistent with the post fusion structure.[2] NR-55426 can be used to elucidate binding and neutralizing antibody profiles in response to RSV.[1] It is often used in conjunction with vector encoding a stabilized RSV prefusion F protein variant DS-Cav1 (BEI Resources NR-55425).[1]

Material Provided:

Each vial contains plasmid DNA in TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0). The DNA concentration and volume provided are shown on the Certificate of Analysis. The vial should be centrifuged prior to opening. Note: The contents of the vial should be used to replicate the plasmid in *E. coli* prior to mammalian expression.

Packaging/Storage:

NR-55426 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be minimized.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Vector paH Containing Human Respiratory Syncytial Virus (RSV), A2 Recombinant Fusion Glycoprotein dFP Gene (Postfusion), NR-55426."

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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NR-55426 is claimed in U.S. Patent Nos. 9738689 and 10017543 and the continuations, continuations in part, re-issues and foreign counterparts thereof.[5,6] NR-55426 cannot be transferred to for-profit entities.

References:

1. Graham, B., Personal Communication.
2. 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.
3. Aricescu, A. R., et al. "A Time- and Cost-Efficient System for High-Level Protein Production in Mammalian Cells." Acta Crystallogr. D. Biol. Crystallogr. 62 (2006): 1243-1250. PubMed: 17001101.
4. McLellan, J. S. et al. "Structure-Based Design of a Fusion Glycoprotein Vaccine for Respiratory Syncytial Virus." Science 342 (2013): 592-598. PubMed: 24179220.
5. Kwong, P. D., et al. "Prefusion RSV F Proteins and their Use." U.S. Patent No. 9738689, 2017.
6. Kwong, P. D., et al. "Prefusion RSV F Proteins and their Use." U.S. Patent No. 10017543, 2018.

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