Product Information Sheet for NR-55426

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

Catalog No. NR-55426

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-55426 is an expression vector encoding Respiratory Syncytial Virus A2 (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 Respiratory Syncytial Virus A2 (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. 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® 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® 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®, 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.

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

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.

Support Provided by NIAID

BEI Resources
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898