Vector pαH Containing the Human Coronavirus, NL63 Recombinant Spike Ectodomain Gene

Catalog No. NR-54976

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

NR-54976 is an expression vector containing the human coronavirus, NL63 recombinant spike ectodomain gene insert (codon optimized) encoding S1 ectodomain residues 1-1291 (GenPept: Q6Q1S2.1) linked to C-terminal T4 fibritin trimerization domain (foldon), an HRV3C cleavage site, octa His-tag and 2X Strep-tag® II. Recombinant S ectodomain trimer is stabilized in the prefusion conformation by two proline substitutions (S1052P and I1053P).[1,2] NR-54976 contains the beta-lactamase gene, *bla*, to provide transformant selection through ampicillin resistance in *Escherichia coli (E. coli)*. NR-54976 is also referred to as VRC7498.[1] The plasmid is approximately 8080 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 S glycoprotein mediates viral binding to the host angiotensin-converting enzyme 2 (ACE2). This protein forms a trimer, and when bound to a host receptor allows fusion of the viral and cellular membranes. The S protein is a target for neutralizing antibodies.[3,4]

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-54976 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 pαH Containing the Human Coronavirus, NL63 Recombinant Spike Ectodomain Gene, NR-54976."

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:

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NR-54976 is claimed in U.S. Provisional Patent Application number 16/344774 and Global Patent Index publication number EP3532095 and the continuations, continuations-in-part, re-issues and foreign counterparts thereof. NR-54976 cannot be transferred to for-profit entities. For-profit entities wishing to obtain this material must inquire to NIAID's Technology Transfer and Intellectual Property Office with reference to NIH Ref. No. E-234-2016 by e-mailing jstein@mail.nih.gov and matthew.reiber@nih.gov. The

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References:

1. Graham, B., Personal Communication.
2. Graham, B., et al. "Prefusion Coronavirus Spike Proteins and their Use." U.S. Provisional Patent Application 16/344774, 2020.
3. Wrapp, D., et al. "Cryo-EM Structure of the 2019-nCoV Spike in the Prefusion Conformation." Science 367 (2020): 1260-1263. PubMed: 32075877.
4. Hulswit, R. J. G., C. A. M. de Haan and B.-J. Bosch. "Coronavirus Spike Protein and Tropism Changes." Adv. Virus Res. 96 (2016): 29-57. PubMed: 27712627.

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