

Modified pαH Vector Containing the Human Coronavirus, OC43 Spike Glycoprotein

Catalog No. NR-54979

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Contributor:

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

Manufacturer:

BEI Resources

Product Description:

The vector for the spike (S) glycoprotein gene from human coronavirus, OC43 (GenBank: [KF572804](#)) was designed by codon optimizing the full-length S sequence (residues 1 to 1287) for mammalian expression and subcloning into the pαH mammalian expression vector, which was modified by subcloning a T4 foldon trimerization domain, HRV3C protease cleavage site, and the octa-histidine and 2X *Strep-tag*[®] II tags downstream of the open reading frame.^{1,2} The recombinant protein is stabilized by AL→PP mutations (residues 1079 and 1080). NR-54979 contains the beta-lactamase gene, *bla*, to provide transformant selection through ampicillin resistance in *Escherichia coli* (*E. coli*). NR-54979 is also referred to as VRC7577.¹ The resulting size of the plasmid is approximately 8,000 base pairs. The complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

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-54979 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: Modified pαH Vector Containing the Human Coronavirus, OC43 Spike Glycoprotein, NR-54979.”

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.

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NR-54979 is claimed in U.S. Provisional Patent Application number 16/344774 and Global Patent Index publication number EP 3532095 and the continuations, continuations-in-part, re-issues and foreign counterparts thereof. NR-54979 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 Scripps Research Institute and Dartmouth College have rights to this material.

References:

1. Graham, B., Personal Communication.
2. Wrapp, D., et al. "Cryo-EM Structure of the 2019-nCoV Spike in the Prefusion Conformation." Science 367 (2020): 1260-1263. PubMed: 32075877.

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