

Vector pET-11a Containing the SARS-Related Coronavirus 2, Wuhan-Hu-1 ADP-Ribose-Phosphatase (ADRP) Gene

Catalog No. NR-52438

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

The ADP-ribose-phosphatase gene (ADRP; amino acids 1024 to 1192; GenPept: [YP_009724389](#)) from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), Wuhan-Hu-1 (GenBank: [MN908947](#)) was codon optimized, tagged with a thrombin cleavage site and a tobacco etch virus (TEV) cleavable N-terminal hexa-histidine tag and cloned into the pET-11a plasmid.^{1,2} The beta-lactamase gene, *bla*, provides transformant selection through ampicillin resistance in *Escherichia coli* (*E. coli*). The complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

ADRP (also referred to as macrodomain 1, Mac1) is located within nsp3 of the SARS-CoV-2 ORF1ab. ADRP can reverse protein ADP-ribosylation and contributes to innate immunity resistance.³ ADRP is essential for viral pathogenesis, and therefore is a virulence factor and potential therapeutic target.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 expression studies.

Packaging/Storage:

NR-52438 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 pET-11a Containing the SARS-Related Coronavirus 2, Wuhan-Hu-1 ADP-Ribose-Phosphatase (ADRP) Gene, NR-52438, contributed by the Center for Structural Genomics of Infectious Diseases under HHSN272201700060C."

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; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. Satchell, K. J. and A. Mesecar, Personal Communication.
2. Wu, F., et al. "A New Coronavirus Associated with Human Respiratory Disease in China." Nature 579 (2020): 265-269. PubMed: 32015508.
3. Kuri, T., et al. "The ADP-Ribose-1"-Monophosphatase Domains of Severe Acute Respiratory Syndrome Coronavirus and Human Coronavirus 229E Mediate Resistance to Antiviral Interferon Responses." J. Gen. Virol. 92 (2011): 1899-1905. PubMed: 21525212.
4. Alhammad, Y. M. O., et al. "The SARS-CoV-2 Conserved Macrodomain is a Mono-ADP-Ribosylhydrolase." J. Virol. 95 (2020): e01969-20. PubMed: 33158944.

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