

Modified pCAGGS Vector Containing the SARS Coronavirus, Urbani Non-Structural Protein 4 Gene

Catalog No. NR-15192

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

The non-structural protein 4 (nsp4) gene from severe acute respiratory syndrome coronavirus (SARS-CoV), Urbani (GenBank: [AY278741](#)) was cloned into the modified pCAGGS mammalian expression vector.¹ pCAGGS was modified by adding a hemagglutinin (HA) tag and 3X FLAG tag C-terminal to the insert coding sequence. NR-15192 contains the beta-lactamase gene, *bla*, to provide 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.

NSP4 is located within the SARS-CoV ORF1ab polyprotein. Together with NSP3 and NSP6, NSP4 induces the formation of double-membrane vesicles, which are critical structures required for viral replication.^{2,3}

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-15192 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 pCAGGS Vector Containing the SARS Coronavirus, Urbani Non-Structural Protein 4 Gene, NR-15192."

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. Kuhn, P., Personal Communication.
2. Angelini, M. M., et al. "Severe Acute Respiratory Syndrome Coronavirus Nonstructural Proteins 3, 4, and 6 Induce Double-Membrane Vesicles." *mBio* 4 (2013): e00524-13. PubMed: 23943763.
3. Sakai, Y., et al. "Two Amino Acids Change in the NSP4 of SARS Coronavirus Abolishes Viral Replication." *Virology* 510 (2017): 165-174. PubMed: 28738245.

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