

# Vector pLVX-EF1α-IRES-Puro Containing the SARS-Related Coronavirus 2, USA-WA1/2020 Non-Structural Protein 9 Gene

Catalog No. NR-52957

For research use only. Not for use in humans.

## Contributor:

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## Manufacturer:

BEI Resources

## Product Description:

Note: The vial label indicates this product contains a TST tag. This nomenclature refers to a 2X Strep tag.<sup>1,2</sup> This product does not express the Twin-Strep-tag® that is commonly referred to as a TST tag.

The non-structural protein 9 (nsp9) gene from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), USA-WA1/2020 (GenBank: [MN985325](#)) was codon optimized and modified by the addition of a C-terminal 2X Strep tag and cloned into the [pLVX-EF1α-IRES-Puro](#) lentiviral expression plasmid.<sup>1,2</sup> The vector contains an internal ribosomal entry site (IRES) that allows a gene-of-interest and a puromycin resistance gene to be simultaneously co-expressed from a single mRNA transcript. Expression of the transcript is driven by the human elongation factor 1 alpha (EF1α) promoter. The beta-lactamase gene, *bla*, provides transformant selection through ampicillin resistance in *Escherichia coli* (*E. coli*) and the puromycin resistance gene, *pac*, provides transformant selection through puromycin resistance in eukaryotic cells. NR-52957 can be used for transient expression and lentivirus generation.<sup>1</sup> The resulting size of the plasmid is approximately 9260 base pairs. The complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

NSP9, located in the ORF1ab polyprotein, is a single-stranded RNA binding protein that is essential for replication, but its exact function is not known.<sup>3,4</sup>

## 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 studies.

## Packaging/Storage:

NR-52957 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 pLVX-EF1α-IRES-Puro Containing the SARS-Related Coronavirus 2, USA-WA1/2020 Non-Structural Protein 9 Gene, NR-52957."

## 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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see [www.cdc.gov/biosafety/publications/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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## References:

1. Krogan, N., Personal Communication.

2. Gordon, D. E., et al. "A SARS-CoV-2 Protein Interaction Map Reveals Targets for Drug Repurposing." Nature 583 (2020): 459-468. PubMed: 32353859.
3. Egloff, M. -P., et al. "The Severe Acute Respiratory Syndrome-Coronavirus Replicative Protein nsp9 is a Single-Stranded RNA-Binding Subunit Unique in the RNA Virus World." Proc. Natl Acad. Sci. USA 101 (2004): 3792-3796. PubMed: 15007178.
4. Miknis, Z. J., et al. "Severe Acute Respiratory Syndrome Coronavirus nsp9 Dimerization Is Essential for Efficient Viral Growth." J. Virol. 83 (2009): 3007-3018. PubMed: 19153232.

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