**Vector pMCSG53 Containing the SARS-Related Coronavirus 2, Wuhan-Hu-1 Nucleocapsid Protein RNA Binding Domain Gene**

**Catalog No. NR-52429**
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**For research use only. Not for use in humans.**

**Contributor:**
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**Manufacturer:**
BEI Resources

**Product Description:**
The RNA binding domain (RBD) of the nucleocapsid (N) protein gene from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), Wuhan-Hu-1 (GenBank: MN908947) was codon optimized and cloned into the pMCSG53 plasmid. pMCSG53 is an *Escherichia coli* (E. coli) expression vector that contains an N-terminal hexa-histidine tag, followed by a tobacco etch virus (TEV) protease recognition site prior to the insert coding sequence, resulting in the expression of a cleavable histidine-tagged protein. It also contains tRNA genes covering rare codons for Arg (AGG/AGA) and Ile (AUA) to improve expression in *E. coli.*
The beta-lactamase gene, *bla,* provides transformant selection through ampicillin resistance in *E. coli.* The resulting size of the vector is approximately 5190 base pairs. The complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

The N protein is involved in the replication, transcription and packaging of the viral genome, and is a target of vaccine and diagnostic assays due to its abundance and its ability to generate a high immunogenic response.

**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-52429 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 pMCSG53 Containing the SARS-Related Coronavirus 2, Wuhan-Hu-1 Nucleocapsid Protein RNA Binding Domain Gene, NR-52429, contributed by the Center for Structural Genomics of Infectious Diseases under HHSN272201700060C.”

**Biosafety Level: 1**

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