

Plasmid Set for Anti-SARS Coronavirus Human Monoclonal Antibody CR3022

Catalog No. NR-53260

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

The vectors for human anti-severe acute respiratory syndrome coronavirus (SARS-CoV) immunoglobulin heavy and light chain variable regions (CR3022 vH and vL, GenBank: [DQ168569](#) and [DQ168570](#), respectively) were designed for transient co-transfection in mammalian cells for expression of recombinant SARS-CoV neutralizing antibody CR3022.^{1,2} CR3022 targets a highly conserved epitope that enables cross-reactive binding in both SARS-CoV and severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2).^{3,4}

NR-53260 consists of the two plasmids listed in Table 1. Descriptions of each component are included below.

Table 1: CR3022 Plasmid Set

Plasmid Type	Insert	BEI Resources Catalog Number
Human IgG1	CR3022 Heavy Chain	NR-52399
Human Igk	CR3022 Light Chain	NR-52400

The CR3022 vH and vL sequences were subcloned into mammalian expression vectors ([pFUSEss-CHlg-hG1](#) and [pFUSEss-CLlg-hk](#), respectively) fused to the N-terminal interleukin 2 (IL2) signal sequence and the C-terminal constant regions of human IgG1 (hlgG1) heavy or human Ig kappa (hlgk) light chain.¹ NR-52399 contains the *Streptoalloteichus hindustanus* bleomycin (*Sh ble*) gene to provide transformant selection through Zeocin™ resistance in *Escherichia coli* (*E. coli*) and mammalian cells.¹ NR-52400 contains the *Bacillus cereus* blastidicin-S deaminase (*bsr*) gene to provide transformant selection through blastidicin resistance in *E. coli* and mammalian cells.¹ The resulting sizes of plasmids are approximately 4830 and 4190 base pairs, respectively. The complete plasmid sequences and maps are provided on the BEI Resources webpage (<https://www.beiresources.org/ProductInformationSheet/tabid>

[/784/Default.aspx?doc=78312.docx](#)). The plasmids were produced in *E. coli* and extracted.

Note: NR-52399 and NR-52400 must be co-transfected to express the CR3022 monoclonal antibody.¹

Material Provided:

Each kit contains one vial of each plasmid DNA in 10 mM Tris-HCl, 1 mM EDTA, pH 8.0. The DNA concentration and volume provided are shown on the Certificate of Analysis. Each vial should be centrifuged prior to opening. Note: The contents of each vial should be used to replicate each plasmid in *E. coli* prior to mammalian expression.

Packaging/Storage:

NR-53260 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 produced under HHSN272201400008C and obtained through BEI Resources, NIAID, NIH: Plasmid Set for Anti-SARS Coronavirus Human Monoclonal Antibody CR3022, NR-53260.”

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/bmb15/index.htm.

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References:

1. Krammer, F., V. Chromikova and G. Asthagiri Arunkumar, Personal Communication.
2. Yuan, M., et al. "A Highly Conserved Cryptic Epitope in the Receptor-Binding Domains of SARS-CoV-2 and SARS-CoV." *Science* 368 (2020): 630-633. PubMed: 32245784.
3. Tian, X., et al. "Potent Binding of 2019 Novel Coronavirus Spike Protein by a SARS Coronavirus-Specific Human Monoclonal Antibody." *Emerg. Microbes Infect.* 9 (2020): 382-385. PubMed: 32065055.
4. Ter Meulen, J., et al. "Human Monoclonal Antibody Combination against SARS Coronavirus: Synergy and Coverage of Escape Mutants." *PLoS Med.* 3 (2006): e237. PubMed: 16796401.

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