

Vector VRC4819 Containing the Murine Anti-Middle East Respiratory Syndrome Coronavirus Spike Monoclonal Antibody G2 Heavy Chain Gene

Catalog No. NR-52028

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

NR-52028 is an expression vector containing a 1388 base pair insert (VH+CH) that encodes a murine anti-Middle East respiratory syndrome coronavirus (MERS-CoV) spike (S) monoclonal antibody G2 heavy chain gene. The vector contains regulatory elements CMV enhancer/promoter, CMV IE splicing acceptor and HTLV-1 R region/splicing donor. Murine Ig heavy leader is provided as the targeting sequence. The kanamycin resistance gene, *aph*, provides transformant selection through kanamycin resistance in *Escherichia coli* (*E. coli*). The resulting size of the plasmid is approximately 5800 base pairs. NR-52028 is also referred to as VRC4819.¹ The complete plasmid sequence and map are provided on the BEI Resources webpage. The plasmid was produced in *E. coli* and extracted.

The murine monoclonal antibody for MERS-CoV S1 was isolated from a hybridoma generated from mice that were primed with plasmid vaccine encoding full-length S gene and boosted with S1 protein. Clone G2 is specific for the S1 subunit but binds outside of the receptor-binding domain (RBD).²

The S glycoprotein mediates viral binding to the host dipeptidyl-peptidase 4 (DPP4). This protein forms a trimer, and when bound to a host receptor, allows fusion of the viral and cellular membranes. The S protein is a target for neutralizing antibodies.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-52028 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 VRC4819 Containing the Murine Anti-Middle East Respiratory Syndrome Coronavirus Spike Monoclonal Antibody G2 Heavy Chain Gene.”

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/bmb15/index.htm.

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References:

1. Graham, B., Personal Communication.

2. Wang, L., et al. "Evaluation of Candidate Vaccine Approaches for MERS-CoV." Nat. Commun. 6 (2015): 7712. PubMed: 26218507
3. Rabaan, A. A., et al. "SARS-CoV-2, SARS-CoV, and MERS-COV: A Comparative Overview." Infez. Med. 1 (2020): 174-184. PubMed: 32275259.

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