

# Vector CMVR Containing the Murine Anti-Middle East Respiratory Syndrome Coronavirus Spike Monoclonal Antibody D12 Heavy Chain Gene

## Catalog No. NR-52026

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**For research use only. Not for use in humans.**

### Contributor:

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### Manufacturer:

BEI Resources

### Product Description:

NR-52026 is an expression vector containing a 1383 base pair (VH+CH) insert that encodes a murine anti-Middle East respiratory syndrome coronavirus (MERS-CoV) spike (S) monoclonal antibody D12 heavy chain gene.<sup>1,2,3</sup> The vector contains regulatory elements CMV enhancer/promoter, CMV IE splicing acceptor and HTLV-1 R region/splicing donor. murine Ig heavy chain 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 5,800 base pairs. NR-52026 is also referred to as CMVR D12-VH-9E8-CH.<sup>1</sup> 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 primed with plasmid vaccine encoding full-length S DNA and boosted with S1 protein. Clone D12 binds the receptor-binding domain within the S1 subunit.<sup>2</sup>

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.<sup>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.

### Packaging/Storage:

NR-52026 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 CMVR Containing the Murine Anti-Middle East Respiratory Syndrome Coronavirus Spike Monoclonal Antibody D12 Heavy Chain Gene, NR-52026."

### 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.

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NR-52026 is claimed in U.S. Patent No. 7,094,598 and U.S. Patent Application No. 15/553,466 and the continuations, continuations-in-part, re-issues and foreign counterparts

thereof.<sup>5,6</sup> NR-52026 cannot be transferred to for-profit entities.

#### References:

1. Graham, B., Personal Communication.
2. Wang, L., et al. "Evaluation of Candidate Vaccine Approaches for MERS-CoV." Nat. Commun. 6 (2015) PubMed: 26218507.
3. Wang, L., et al. "Importance of Neutralizing Monoclonal Antibodies Targeting Multiple Antigenic Sites on the Middle East Respiratory Syndrome Coronavirus Spike Glycoprotein to Avoid Neutralization Escape." J. Virol. 92 (2018): e02002-17. PubMed: 29514901.
4. Rabaan, A. A., et al. "SARS-CoV-2, SARS-CoV, and MERS-COV: A Comparative Overview." Infez. Med. 1 (2020): 174-184. PubMed: 32275259.
5. Graham, B., et al. "Middle East Respiratory Syndrome Coronavirus Immunogens, Antibodies, and their Use." U.S. Patent Application 15/553466, 2018.
6. Nabel, G. J. and Z. Yang. "Development of a Preventive Vaccine For Filovirus Infection in Primate." U.S. Patent No. 7094598, 2006.

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