Middle East Respiratory Syndrome Coronavirus, Recombinant Infectious Clone with ORF5 Red Fluorescent Protein Replacement (icMERS-CoV-RFP-ΔORF5)

Catalog No. NR-48813

For research use only. Not for human use.

Contributor:
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Manufacturer:
BEI Resources

Product Description:
Virus Classification: *Nodovirales*, *Coronaviridae*, *Coronavirinae, Betacoronavirus*
Agent: Middle East respiratory syndrome coronavirus (MERS-CoV)
Strain/Isolate: Recombinant infectious clone with ORF5 red fluorescent protein replacement (icMERS-CoV-RFP-ΔORF5)[1,2]

NR-48813 is an engineered recombinant coronavirus based on the MERS-CoV, EMC2012 genome. The group-specific MERS-CoV accessory gene ORF5 was deleted and replaced with a synthetic gene encoding red fluorescent protein.[1,2] The individual MERS-CoV group-specific ORFs are not essential for virus replication, although the absence of these genes as a group does attenuate peak viral titers. The MERS-CoV ORF5 accessory protein was recently shown to be a potent interferon antagonist.[3]

Material Provided:
Each vial contains approximately 1 mL of cell lysate and supernatant from *Cercopithecus aethiops* kidney epithelial cells (Vero: ATCC® CCL-81™) infected with icMERS-CoV-RFP-ΔORF5.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:
NR-48813 was packaged aseptically, in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:
Host: Vero cells; ATCC® CCL-81™
Growth Medium: Dulbecco's Modified Eagle's Minimum modified to contain 4 mM L-glutamine, 4500 mg per liter glucose, 1 mM sodium pyruvate, and 1500 mg per liter sodium bicarbonate, supplemented with 5% fetal bovine serum, or equivalent
Infection: Cells should be 80% to 90% confluent
Incubation: 3 to 4 days at 37°C and 5% CO_2
Cytopathic Effect: Syncytial rounding and sloughing

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Middle East Respiratory Syndrome Coronavirus, Recombinant Infectious Clone with ORF5 Red Fluorescent Protein Replacement (icMERS-CoV-RFP-ΔORF5), NR-48813."

Biosafety Level: 3 Enhanced
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.

ATCC® employs Biosafety Level 3 facilities with enhanced practices and procedures for research and production activities utilizing genetically modified MERS coronaviruses.

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References:

1. Baric, R. S., Personal Communication.
2. Scobey, T., et al. "Reverse Genetics with a Full-Length Infectious cDNA of the Middle East Respiratory Syndrome Coronavirus." Proc. Natl. Acad. Sci. USA 110 (2013): e5. PubMed: 24043791.
3. Yang, Y., et al. "The Structural and Accessory Proteins M, ORF 4a, ORF 4b, and ORF 5 of Middle East Respiratory Syndrome Coronavirus (MERSCoV) are Potent Interferon Antagonists." Protein Cell 4 (2013): 951-961. PubMed: 24318862.

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