

Recombinant Murine Coronavirus, icA59

Catalog No. NR-43000

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Coronaviridae*, *Coronavirinae*, *Betacoronavirus*

Species: Murine coronavirus [formerly both murine hepatitis virus (MHV) and mouse hepatitis virus]¹

Strain/Isolate: icA59

Original Source: NR-43000 is a recombinant murine coronavirus that was produced using a vaccinia virus-based reverse genetics system, and derived from cloned, full-length MHV-A59 cDNA.^{2,3}

Comments: The complete genome of the recombinant strain has been sequenced (GenBank: [KF268337](https://www.ncbi.nlm.nih.gov/nuccore/KF268337)).

Murine coronaviruses are enveloped, positive-stranded RNA viruses capable of causing a variety of diseases in mice.⁴ Based on the organ tropism displayed by the strains, they can be divided into several groups like enterotropic, hepatotropic, pneumotropic and neurotropic.⁵ MHV, A59 strain is a relatively neuroattenuated and moderately hepatovirulent strain that was isolated in 1961 from a colony of BALB/c mice with leukemia.^{2,5} It is a widely studied strain which reaches high titers in cell culture and has a large collection of temperature-sensitive mutants defective in viral RNA synthesis.²

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Mus musculus* liver epithelial cells infected with recombinant murine coronavirus, icA59.

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

Packaging/Storage:

NR-43000 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: NCTC clone 1469 cells (ATCC® CCL-9.1™)

Growth Medium: Dulbecco's Modified Eagle's Medium modified to contain 4 mM L-glutamine, 4500 mg/L glucose, 1 mM sodium pyruvate, and 1.5 g/L sodium bicarbonate supplemented with 2% horse serum, or equivalent

Infection: Cells should be 80% to 90% confluent

Incubation: 2 to 4 days at 37°C and 5% CO₂

Cytopathic Effect: Cell enlargement and detachment

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Recombinant Murine Coronavirus, icA59, NR-43000."

Biosafety Level: 2

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. [ICTV Taxonomy History for Murine coronavirus](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC411111/)
2. Coley, S. E., et al. "Recombinant Mouse Hepatitis Virus from Cloned, Full-Length cDNA Replicates to High Titers

- in vitro* and is Fully Pathogenic *in vivo*." J. Virol. 79 (2005): 3097-3196. PubMed: 15709029.
3. Roth-Cross, J. K., et al. "Organ-Specific Attenuation of Murine Hepatitis Virus Strain A59 by Replacement of Catalytic Residues in the Putative Viral Cyclic Phosphodiesterase ns2." J. Virol. 83 (2009): 3743-3753. PubMed: 19176619.
 4. Lane, T. E. and M. J. Buchmeier. "Murine Coronavirus Infection: A Paradigm for Virus-Induced Demyelinating Disease." Trends Microbiol. 5 (1997): 9-14. PubMed: 9025229.
 5. Weiss, S. R. and J. L. Leibowitz. "Coronavirus Pathogenesis." Adv. Virus Res. 81 (2011): 85-164. PubMed: 22094080.

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