

## Recombinant Murine Coronavirus, icA59

Catalog No. NR-43000

**For research use only. Not for human use.**

### Contributor:

Susan R. Weiss, Ph.D., Department of Microbiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, USA

### Manufacturer:

BEI Resources

### Product Description:

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

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

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.<sup>2,3</sup>

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.<sup>4</sup> Based on the organ tropism displayed by the strains, they can be divided into several groups like enterotropic, hepatotropic, pneumotropic and neurotropic.<sup>5</sup> 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.<sup>2,5</sup> 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.<sup>2</sup>

### 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% CO<sub>2</sub>

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](http://www.cdc.gov/biosafety/publications/bmb15/index.htm).

### Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at [www.beiresources.org](http://www.beiresources.org).

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

### Use Restrictions:

**This material is distributed for internal research, non-commercial purposes only.** This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

### References:

1. [ICTV Taxonomy History for Murine coronavirus](#)
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.

ATCC® is a trademark of the American Type Culture Collection.

