

Murine Norovirus 1, Clone CW3

Catalog No. NR-50895

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Caliciviridae*, *Norovirus*

Species: Murine norovirus

Strain: 1, clone CW3 (also referred to as MNV-1.CW3, MNNoV^{CW3}) (Note: The product designation on the vial label, Murine Norovirus, CW3, is missing 1. The correct designation is Murine Norovirus 1, CW3.)

Original Source: Murine norovirus 1 (MNV-1), clone CW3 was isolated in 2002 from brain tissue of STAT^{-/-} mice infected with MNV-1 by the oral route.¹⁻³ It was plaque purified three times prior to deposit to BEI Resources.^{1,2}

Comments: MNV-1, clone CW3 has been extensively used in studying host molecules essential for norovirus infection, norovirus lifecycle and factors affecting pathogenesis in the host, both *in vivo* and *in vitro*.⁴⁻⁶ The complete genome of MNV-1, clone CW3 has been sequenced (GenBank: [EF014462](https://www.ncbi.nlm.nih.gov/nuccore/EF014462)).²

Noroviruses are non-enveloped positive-sense RNA viruses belonging to family *Caliciviridae*.⁶ Noroviruses are highly prevalent enteric viruses and in humans are responsible for one-fifth of all cases of gastroenteritis world-wide.⁷ Human norovirus infections are typically self-limiting, however severe and long-term infections can occur in elderly or immunocompromised individuals.

Murine noroviruses are related noroviruses that infect mice and share many molecular and biological properties of human noroviruses.⁴ These viruses can be grown in cell culture and are considered important tools in understanding norovirus life cycle and pathogenesis.⁷

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Mus musculus* macrophages infected with murine norovirus 1, clone CW3.

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

Packaging/Storage:

NR-50895 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: *Mus musculus* macrophages (RAW 264.7; ATCC® TIB-71™)

Growth Medium: Dulbecco's Modified Eagle's Medium containing 4 mM L-glutamine, 4500 mg per L glucose, 1 mM sodium pyruvate, and 1500 mg per L sodium bicarbonate supplemented with 2% fetal bovine serum or equivalent

Infection: Cells should be 60% to 80% confluent

Incubation: 5 to 7 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Murine Norovirus 1, Clone CW3, NR-50895."

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/bmbl5/index.htm.

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References:

1. Virgin, H. W., IV, Personal Communication.
2. Mumphrey, S. M., et al. "Murine Norovirus 1 Infection is Associated with Histopathological Changes in Immunocompetent Hosts, but Clinical Disease is Prevented by STAT1-Dependent Interferon Responses." *J. Virol.* 81 (2007): 3251-3263. PubMed: 17229692.
3. Wobus, C. E., et al. "Replication of Norovirus in Cell Culture Reveals a Tropism for Dendritic Cells and Macrophages." *PLoS Biol.* 2 (2004): e432. PubMed: 15562321.
4. Strong, D. W., et al. "Protruding Domain of Capsid Protein is Necessary and Sufficient to Determine Murine Norovirus Replication and Pathogenesis in vivo." *J. Virol.* 86 (2012): 2950-2958. PubMed: 22258242.
5. Nice, T. J., et al. "A Single-Amino-Acid Change in Murine Norovirus NS1/2 is Sufficient for Colonic Tropism and Persistence." *J. Virol.* 87 (2013): 327-334. PubMed: 23077309.
6. Orchard, R. C., et al. "Discovery of a Proteinaceous Cellular Receptor for a Norovirus." *Science* 353 (2016): 933-936. PubMed: 27540007.
7. Wobus, C. E. "The Dual Tropism of Noroviruses." *J. Virol.* 92 (2018): e01010. PubMed: 29848591.

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