# Product Information Sheet for NR-49130

## Enterovirus D68, US/MO/14-18949

## Catalog No. NR-49130

This reagent is the property of the U.S. Government.

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

### Contributor:

M. Steven Oberste, Ph.D., Chief, Poliovirus and Picornavirus Laboratory Branch, Division of Viral Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

### Manufacturer:

BEI Resources

### Product Description:

Virus Classification: *Picornaviridae, Enterovirus*
Species: Enterovirus D
Type: D68
Strain/Isolate: US/MO/14-18949
Original Source: Enterovirus D68 (EV-D68), US/MO/14-18949 was isolated from a nasopharyngeal swab taken from a human with respiratory illness in Missouri, USA, in August 2014.[1]
Comments: A nearly complete genome sequence for EV-D68, US/MO/14-18949 is available (GenBank: KM851227).

Enteroviruses are small non-enveloped viruses whose genome consists of a single strand of positive-sense RNA.[2] EV-D68 was first identified in California in 1962 from cases of bronchiolitis and pneumonia and was rarely reported in the United States. Clusters of severe respiratory disease were reported to the Centers for Disease Control and Prevention beginning in August 2014.[2] EV-D68 was identified from a high percentage of initial cases, and severe EV-D68 infections became widespread across the United States in August and September.[2] These outbreaks were associated temporally with an increase in polio-like neurological disorder known as acute flaccid myelitis (AFM), with symptoms like dysneuria and muscle weakness, occurring predominantly in children.[3,4] Information regarding causation between EV-D68 and AFM is still limited; however, rapidly accumulating clinical, immunological and epidemiological evidence points to EV-D68 as a major causative agent of AFM.[3,4]

### Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from human rhabdomyosarcoma cells (RD, ATCC® CCL-136™) infected with EV-D68, US/MO/14-18949.

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

### Packaging/Storage:

NR-49130 was packaged aseptically in 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: RD cells (ATCC® CCL-136™)
Growth Medium: Eagle's Minimum Essential Medium with Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate, and 1500 mg/L sodium bicarbonate, supplemented with 2% fetal bovine serum.
Infection: Cells should be 70% to 90% confluent
Incubation: 1 to 8 days at 33°C and 5% $CO_2$
Cytopathic Effect: Cell rounding and detachment

### Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Enterovirus D68, US/MO/14-18949, NR-49130."

### 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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

### 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.

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

**BEI Resources**
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

license is required. U.S. Government contractors may need a license before first commercial sale.

**References:**

1. Nix, W. A., Personal Communication.
2. Brown, B. A., et al. "Seven Strains of Enterovirus D68 Detected in the United States During the 2014 Severe Respiratory Disease Outbreak." Genome Announc. 2 (2014): e01201-14. PubMed: 25414503.
3. Hixon, A. M., et al. "Understanding Enterovirus D68-Induced Neurologic Disease: A Basic Science Review." Viruses 11 (2019): doi: 10.3390/v11090821. PubMed: 31487952.
4. Sun, J., X. Y. Hu and X. F. Yu. "Current Understanding of Human Enterovirus D68." Viruses 11 (2019): doi: 10.3390/v11060490. PubMed: 31146373.



Support Provided by NIAID

**BEI Resources**
www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898