

**Enterovirus Species A Type 71,
USA/WA/2016-19522**

Catalog No. NR-51999

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Picornaviridae, Enterovirus*

Species: Enterovirus A

Type: A71

Strain/Isolate: USA/WA/2016-19522 (also referred to as USA/2016/19522)

Original Source: Enterovirus species A type 71 (EV-A71), USA/WA/2016-19522 was isolated in 2016 from the stool sample of a human subject suffering from acute flaccid myelitis in the USA.¹

Comments: The complete genome of EV-A71, USA/WA/2016-19522 has been sequenced (GenBank: [KY888026](https://www.ncbi.nlm.nih.gov/nuccore/KY888026)).

EV-A71, a frequent cause of hand-foot-and-mouth disease, is a human enterovirus which was first identified in 1969.² EV-A71 can also cause a variety of severe neurological disorders, including aseptic meningitis, brainstem encephalitis and poliomyelitis-like paralysis [acute flaccid myelitis (AFM)]. Most of the fatal cases occur in children less than 5 years of age.³ Since 1997, there has been a significant increase in EV-A71 epidemic activity throughout the Asia-Pacific region.^{4,5} The pathogenesis of EV-A71 infection, especially the CNS involvement, is not yet clear.^{6,7} There is no effective antiviral treatment for severe EV-A71 infections and no vaccine is available.

EV-A71 is a small, non-enveloped, icosahedral virus with a single-stranded, approximately 7.5 kb RNA genome of positive polarity. The single open reading frame encodes a large polyprotein of approximately 2200 amino acids and is flanked by untranslated regions at the 5' and 3' ends.

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from human lung fibroblast (HLF-a) cells infected with EV-A71, USA/WA/2016-19522.

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

Packaging/Storage:

NR-51999 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: Human lung fibroblast cells (HLF-a; ATCC® CCL-199™)

Growth Medium: Eagle's Minimum Essential Medium containing Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate and 1.5 g/L of sodium bicarbonate, supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be 80% to 90% confluent

Incubation: 3 to 5 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was contributed by Division of Viral Diseases, Centers for Disease Control and Prevention for distribution through BEI Resources, NIAID, NIH: Enterovirus Species A Type 71, USA/WA/2016-19522, NR-51999."

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/bmbli5/index.htm.

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References:

1. Nix, W. A., Personal Communication.
2. Yan, J.-J., et al. "Complete Genome Analysis of Enterovirus 71 Isolated from an Outbreak in Taiwan and Rapid Identification of Enterovirus 71 and Coxsackievirus A16 by RT-PCR." J. Med. Virol. 65 (2001): 331-339. PubMed: 11536241.
3. Smee, D. F., et al. "Susceptibilities of Enterovirus D68, Enterovirus 71 and Rhinovirus 87 Strains for Various Antivirus Compounds." Antiviral Res. 131 (2016): 61-65. PubMed: 27063860.
4. Schmidt, N. J., E. H. Lennette and H. H. Ho. "An Apparently New Enterovirus Isolated from Patients with Disease of the Central Nervous System." J. Infect. Dis. 129 (1974): 304-309. PubMed: 4361245.
5. McMinn, P. C. "An Overview of the Evolution of Enterovirus 71 and Its Clinical and Public Health Significance." FEMS Microbiol. Rev. 26 (2002): 91-107. PubMed: 12007645.
6. Lin, T.-Y., et al. "Enterovirus 71 Outbreaks, Taiwan: Occurrence and Recognition." Emerg. Infect. Dis. 9 (2003): 291-293. PubMed: 12643822.
7. Chen, C.-S., et al. "Retrograde Axonal Transport: A Major Transmission Route of Enterovirus 71 in Mice." J. Virol. (2007): 8996-9003. PubMed: 17567704.

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