Enterovirus 71, Tainan/4643/1998, Mouse-Adapted

Catalog No. NR-51845

For research use only. Not for human use.

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Manufacturer:
BEI Resources

Product Description:
Virus Classification: *Picornaviridae, Enterovirus*
Species: Enterovirus A
Type: 71 (also referred to as A71)
Strain/Isolate: Tainan/4643/1998, mouse-adapted
Original Source: Enterovirus 71 (EV-71), Tainan/4643/1998, mouse-adapted was derived from EV-71, Tainan/4643/1998 which had undergone four serial passages in mice (BEI Resources NR-472). The virus was further adapted by six sequential passages in AG129 mice before purification.[1]
Comments: The complete genome of EV-71, Tainan/4643/1998 has been sequenced (GenBank: AF304458).[2] EV-71, Tainan/4643/1998, mouse-adapted was adapted from BEI Resources NR-472 to improve replication in AG129 mice by six sequential passages in mice, and designated EV-71, Tainan/4643/1998, mouse-passage 10 (MP10). The mouse-adapted virus was plaque purified in rhabdomyosarcoma (RD) cells and a virus stock was prepared by replication in RD cells.[1]

EV-71, a frequent cause of hand-foot-and-mouth disease, is a human enterovirus which was first identified in 1969.[3] EV-71 can also cause a variety of severe neurological disorders, including aseptic meningitis, brainstem encephalitis and poliomyelitis-like paralysis [acute flaccid paralysis (AFP)]. Most of the fatal cases occur in children less than 5 years of age.[4] Since 1997, there has been a significant increase in EV 71 epidemic activity throughout the Asia–Pacific region.[5,6] The pathogenesis of EV-71 infection, especially the CNS involvement, is not yet clear.[7,8] There is no effective antiviral treatment for severe EV-71 infections and no vaccine is available.

EV-71 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 rhabdomyosarcoma (RD) cells infected with EV-71, Tainan/4643/1998, mouse-adapted.

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

Packaging/Storage:
NR-51845 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: Rhabdomyosarcoma cells (RD; ATCC® CCL-136™)
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 70% to 90% confluent
Incubation: 3 to 7 days at 37°C and 5% CO_2
Cytopathic Effect: Cell rounding and sloughing

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Enterovirus 71, Tainan/4643/1998, Mouse-Adapted, NR-51845."

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. Tarbet, E. B., Personal Communication.
2. Wang, J.-R., et al. "An Outbreak of Enterovirus 71 Infection in Taiwan, 1998. II. Laboratory Diagnosis and Genetic Analysis." J. Clin. Virol. 17 (2000): 91–99. PubMed: 10942089.
3. 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.
4. 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.
5. 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.
6. 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.
7. Lin, T.-Y., et al. "Enterovirus 71 Outbreaks, Taiwan: Occurrence and Recognition." Emerg. Infect. Dis. 9 (2003): 291–293. PubMed: 12643822.
8. 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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