

Human Enterovirus 71 (HEV-71), Tainan/4643/1998

Catalog No. NR-471

For research use only. Not for human use.

Contributor:

National Cheng Kung University, Tainan, Taiwan

Product Description:

Virus Classification: *Picornaviridae, Enterovirus, Human enterovirus A*

Agent: Human enterovirus 71 (HEV-71)

Strain/Isolate: Tainan/4643/1998

Original Source: Isolated in 1998 from a patient suffering from encephalomyelitis in Tainan, Taiwan¹

Comments: The complete genome of HEV-71, Tainan/4643/1998 has been sequenced (GenBank: AF304458).²

HEV-71, a frequent cause of hand-foot-and-mouth disease, is a human enterovirus which was first identified in 1969.³ HEV-71 can also cause a variety of severe neurological disorders, including aseptic meningitis, brainstem encephalitis, and poliomyelitis-like paralysis. Most of the fatal cases occur in children less than 3 years of age.

Since 1997, there has been a significant increase in HEV-71 epidemic activity throughout the Asia-Pacific region.^{4,5} The pathogenesis of HEV-71 infection, especially the CNS involvement, is not yet clear.^{6,7} There is no effective antiviral treatment for severe HEV-71 infections and no vaccine is available.

HEV-71 is a small, non-enveloped, icosahedral virus with a single-stranded, ~ 7.5 kb RNA genome of positive polarity. The single open reading frame encodes a large polyprotein of ~ 2200 amino acids and is flanked by untranslated regions at the 5' and 3' ends.⁴

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from human rhabdomyosarcoma (RD) cells infected with HEV-71, Tainan/4643/1998.

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

Packaging/Storage:

NR-471 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: RD cells (ATCC® CCL-136™)

Growth Medium: Minimum Essential Medium supplemented with 2% irradiated fetal bovine serum, or equivalent

Infection: Cells should be 80–90% confluent (not 100% confluent)

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

Cytopathic Effect: Cell rounding and detachment

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Human Enterovirus 71 (HEV-71), Tainan/4643/1998, NR-471."

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, 2007; see www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.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.

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 make 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. 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.
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. GenBank: AF304458.
3. 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.
4. 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.
5. Lin, T.-Y., et al. "Enterovirus 71 Outbreaks, Taiwan: Occurrence and Recognition." Emerg. Infect. Dis. 9 (2003): 291–293. PubMed: 12643822.
6. Chen, C.-S., et al. "Retrograde Axonal Transport: A Major Transmission Route of Enterovirus 71 in Mice." J. Virol. (2007): 8996-9003. PubMed: 17567704.
7. Chen, Y.-C., et al. "A Murine Oral Enterovirus 71 Infection Model with Central Nervous System Involvement." J. Gen. Virol. 85 (2004): 69–77. PubMed: 14718621.
8. Hsiung, G. D. and J. R. Wang. "Enterovirus Infections with Special Reference to Enterovirus 71." J. Microbiol. Immunol. Infect. 33 (2000): 1–8. PubMed: 10806956.

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