

**Dengue Virus Type 4, H241
(Tissue Culture Adapted)**

Catalog No. NR-86

(Derived from ATCC® VR-1490™)

For research use only. Not for human use.

Contributor:

ATCC®

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Flaviviridae, Flavivirus*

Agent: Dengue virus type 4 (DEN-4)

Strain/Isolate: H241 (tissue culture adapted)

Source: Derived from existing strain. The original H241 strain was isolated in 1956 from the serum of a patient in the Philippine Islands.¹

Comments: DEN-4, H241 was deposited at ATCC® by Dr. W. Brandt and was used to prepare ATCC® VR-217™ in suckling mouse. VR-1490™ was derived through tissue culture adaptation of ATCC® VR-217™. The complete genome of DEN-4, H241 has been sequenced (GenBank: AY947539).²

Dengue virus causes the most common vector-borne viral disease of humans, with over 50 million cases in tropical and subtropical regions each year.³ The disease is now endemic in over 110 countries in the world, with Southeast Asia and the Western Pacific being the most seriously affected. Dengue disease is caused by one of four closely related, but antigenically distinct, serotypes (designated DEN-1 to -4).³ Infections produce a spectrum of clinical illness ranging from a nonspecific viral syndrome to severe and fatal hemorrhagic disease.^{4,5} Humans are the major host of dengue virus, with *Aedes aegypti* mosquitoes the principal vectors.

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Macaca mulatta* kidney epithelial cells (LLC-MK2 derivative; ATCC® CCL-7.1™) infected with DEN-4, H241.

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

Packaging/Storage:

NR-86 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: LLC-MK2 derivative cells; ATCC® CCL-7.1™

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 100% confluent

Incubation: 7 to 9 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and degeneration

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Dengue Virus Type 4, H241 (Tissue Culture Adapted), NR-86."

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/bmb15/index.htm.

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References:

1. Hammon, W.M., et al. "Viruses Associated with Epidemic Hemorrhagic Fevers of the Philippines and Thailand." Science 131 (1960): 1102-1103. PubMed: 14399343.
2. Yip, A., et al. Novartis Institute for Tropical Diseases, Singapore, Direct Submission (2005).
3. Holmes, E. C. and S. S. Twiddy. "The Origin, Emergence and Evolutionary Genetics of Dengue Virus." Infect. Genet. Evol. 3 (2003): 19-28. PubMed: 12797969.
4. Malavige, G. N., et al. "Dengue Viral Infections." Postgrad. Med. J. 80 (2004): 588-601. PubMed: 15466994.
5. Kao, C.-L., et al. "Laboratory Diagnosis of Dengue Virus Infection: Current and Future Perspectives in Clinical Diagnosis and Public Health." J. Microbiol. Immunol. Infect. 38 (2005): 5-16. PubMed: 15692621.

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