

Yellow Fever Virus, 17D

Catalog No. NR-116

For research use only. Not for human use.

Contributor:

ATCC®

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Flavivirus, Flaviviridae*

Species: Yellow fever virus

Strain/Isolate: 17D

Original Source: Derived from the virulent Asibi strain of yellow fever virus (YFV) by *in vitro* passage in chicken embryo tissue. The Asibi strain was isolated in 1927 by inoculating rhesus macaques with the blood of a West African patient.¹

Comments: The complete genome of YFV, 17D vaccine strain has been sequenced (GenBank: [X03700](#)).⁴

YFV is a mosquito-borne virus, which circulates in natural transmission cycles between mosquitoes and temporary amplifiers, humans and monkeys. Yellow fever (YF) is endemic in tropical regions of Africa and South America and poses a serious health risk to travelers to these areas.^{3,4} Vector-control strategies that were once successful for elimination of YFV from many regions have faltered, leading to reemergence of the disease.⁵ Currently, there is no effective drug treatment for YF; however, live-attenuated 17D YF vaccines have demonstrated high rates of effectiveness and good safety profiles.⁶⁻⁸

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from African green monkey kidney cells infected with YFV, 17D.

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

Packaging/Storage:

NR-116 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: African green monkey kidney cells (Vero; ATCC® CCL-81™)

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 approximately 90% confluent

Incubation: 4 to 7 days at 37°C and 5% CO₂

Cytopathic Effect: Cell enlargement, rounding and detachment may or may not be observed; confirmation of infectivity by immunofluorescence is recommended.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Yellow Fever Virus, 17D, NR-116."

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:

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2. Hahn, C. S., et al. "Comparison of the Virulent Asibi Strain of Yellow Fever Virus with the 17D Vaccine Strain Derived from It." Proc. Natl. Acad. Sci. USA 84 (1986): 2019-2023. PubMed: 3470774.
3. Tomori, O. "Yellow Fever: The Recurring Plague." Crit. Rev. Clin. Lab. Sci. 41 (2004): 391-427. PubMed: 15487593.
4. Rice, C. M., et al. "Nucleotide Sequence of Yellow Fever Virus: Implications for Flavivirus Gene Expression and Evolution." Science 229 (1985): 726-733. PubMed: 4023707. GenBank: NC_002031.
5. Barrett, A. D. T. and S. Higgs. "Yellow Fever: A Disease that Has Yet to Be Conquered." Annu. Rev. Entomol. 52 (2007): 209-229. PubMed: 16913829.
6. Bryant, J. E., E. C. Holmes, and A. D. T. Barrett. "Out of Africa: A Molecular Perspective on the Introduction of Yellow Fever Virus into the Americas." PLoS Pathog. 3 (2007): e75. PubMed: 17511518.
7. Barnett, E. D. "Yellow Fever: Epidemiology and Prevention." Clin. Infect. Dis. 44 (2007): 850-856. PubMed: 17304460.
8. Barrett, A. D. T., et al. "17D Yellow Fever Vaccines: New Insights. A Report of a Workshop Held during the World Congress on Medicine and Health in the Tropics, Marseille, France, Monday 12 September 2005." Vaccine 25 (2007): 2758-2765. PubMed: 17368349.
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10. Pugachev, K. V., F. Guirakhoo, and T. P. Monath. "New Developments in Flavivirus Vaccines with Special Attention to Yellow Fever." Curr. Opin. Infect. Dis. 18 (2005): 387-394. PubMed: 16148524.

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