

West Nile Virus, B 956

Catalog No. NR-72

(Derived from ATCC® VR-1510™)

For research use only. Not for use in humans.

Contributor:

ATCC®

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Flavivirus, Flaviviridae*

Agent: West Nile Virus (WNV)

Type Strain/Isolate: B 956

Original Source: WNV B 956 was isolated in 1937 from the blood of a febrile human living in the West Nile district of Uganda.¹

Comments: The complete genome of WNV B 956 has been sequenced (GenBank: [M12294](#)).^{2,3} B 956 was the first strain of WNV that was isolated and is recognized as the prototype strain of lineage II.⁴

WNV is an arthropod-borne virus which circulates in natural transmission cycles between primarily mosquitoes (*Culex* species) and birds, with humans as incidental hosts.⁵ The virus is indigenous to Africa, Asia, Australia and Europe, and has recently caused large epidemics in Romania, Russia and Israel. WNV was recently introduced to North America, where it was first detected in 1999 during an epidemic of meningoencephalitis in New York City.⁶ Most human WNV infections are asymptomatic but clinical infections can range in severity from uncomplicated West Nile fever to fatal meningoencephalitis; the incidence of severe neuroinvasive disease and death increase with age.^{7,8} There is no established WNV-specific treatment or licensed vaccine for humans currently available.⁹ Prevention depends on organized, sustained vector mosquito control and public education.⁸

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Cercopithecus aethiops* kidney epithelial cells (Vero; ATCC® CCL-81™) infected with WNV, B 956.

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

Packaging/Storage:

NR-72 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: *Cercopithecus aethiops* kidney epithelial cells (Vero; ATCC® CCL-81™)

Growth Medium: Minimum Essential Medium supplemented with 2 mM L-glutamine, 1 mM sodium pyruvate, and 2% irradiated fetal bovine serum

Infection: Cells should be 80 to 90% confluent

Incubation: 4 to 8 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: West Nile Virus, B 956, NR-72."

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. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

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References:

1. Smithburn, K. C., et al. "A Neurotropic Virus Isolated from the Blood of a Native of Uganda." Amer. J. Trop. Med. 20 (1940): 471.
2. Castle, E., et al. "Primary Structure of the West Nile Flavivirus Genome Region Coding for All Nonstructural Proteins." Virology 149 (1986): 10-26. PubMed: 3753811.
3. Yamshchikov, V. F., et al. "An Infectious Clone of the West Nile Flavivirus." Virology 281 (2001): 294-304. PubMed: 11277701.
4. Botha, E. M., et al. "Genetic Determinants of Virulence in Pathogenic Lineage 2 West Nile Virus Strains." Emerg. Infect. Dis. 14 (2008): 222-230. PubMed: 18258114.
5. Granwehr, B. P., et al. "West Nile Virus: Where Are We Now?" Lancet Infect. Dis. 4 (2004): 547-556. PubMed: 15336221.
6. Lanciotti, R. S., et al. "Origin of the West Nile Virus Responsible for an Outbreak of Encephalitis in the Northeastern United States." Science 286 (1999): 2333-2337. PubMed: 10600742.
7. Solomon, T., et al. "West Nile Encephalitis." BMJ 326 (2003): 865-869. PubMed: 12702624.
8. Campbell, G. L., et al. "West Nile Virus." Lancet Infect. Dis. 2 (2002): 519-529. PubMed: 12206968.
9. Monath, T. P., et al. "A Live, Attenuated Recombinant West Nile Virus Vaccine." Proc. Natl. Acad. Sci. U.S.A. 103 (2006): 6694-6699. PubMed: 16617103.
10. Samuel, M. A. and M. S. Diamond. "Pathogenesis of West Nile Virus Infection: A Balance between Virulence, Innate and Adaptive Immunity, and Viral Evasion." J. Virol. 80 (2006): 9349-9360. PubMed: 16973541.
11. Hayes, E. B., et al. "Virology, Pathology, and Clinical Manifestations of West Nile Virus Disease." Emerg. Infect. Dis. 11 (2005): 1174-1179. PubMed: 16102303.
12. Lanciotti, R. S., et al. "Complete Genome Sequences and Phylogenetic Analysis of West Nile Virus Strains Isolated from the United States, Europe, and the Middle East." Virology 298 (2002): 96-105. PubMed: 12093177.

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