

**West Nile Virus, KERN 5281**

**Catalog No. NR-49923**

**For research use only. Not for use in humans.**

**Contributor:**

World Reference Center for Emerging Viruses and Arboviruses (WRCEVA), University of Texas Medical Branch, Galveston, Texas, USA

**Manufacturer:**

BEI Resources

**Product Description:**

Virus Classification: *Flavivirus, Flaviviridae*

Species: West Nile Virus

Strain/Isolate: KERN 5281

Original Source: West Nile virus (WNV), KERN 5281 was isolated from a mosquito (*Culex tarsalis*) in Kern County, California, USA on June 2, 2005 and contributed to WRCEVA by Aaron Brault, University of California-Davis, Davis, California, USA.<sup>1</sup>

Comments: In order to remove contaminating mycoplasma, the second viral passage at BEI Resources was performed by polyethylenimine-mediated transfection of extracted viral RNA.

WNV is an arthropod-borne virus which circulates in natural transmission cycles between primarily mosquitoes (*Culex* species) and birds, with humans as incidental hosts.<sup>2</sup> 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.<sup>3</sup> It caused one of the worst epidemics in North America in 2012 in Texas in which 1,868 cases were reported and 89 people died.<sup>4</sup> 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.<sup>5,6</sup> There is no established WNV-specific treatment or licensed vaccine for humans currently available.<sup>7</sup> Prevention depends on organized, sustained vector mosquito control and public education.<sup>6</sup>

**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, KERN 5281.

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

**Packaging/Storage:**

NR-49923 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: 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 grams per liter of sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be 80% to 90% confluent

Incubation: 3 to 5 days at 37°C and 5% CO<sub>2</sub>

Cytopathic Effect: Cell rounding and sloughing

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH, as part of the WRCEVA program: West Nile Virus, KERN 5281, NR-49923."

**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/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.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](http://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 makes 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. Tesh, R. B., Personal Communication.
2. Granwehr, B. P., et al. "West Nile Virus: Where Are We Now?" Lancet Infect. Dis. 4 (2004): 547-556. PubMed: 15336221.
3. 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.
4. Murray, K. O., et al. "West Nile Virus, Texas, USA, 2012." Emerg. Infect. Dis. 19 (2013): 1836-1838. PubMed: 24210089.
5. Solomon, T., et al. "West Nile Encephalitis." BMJ 326 (2003): 865-869. PubMed: 12702624.
6. Campbell, G. L., et al. "West Nile Virus." Lancet Infect. Dis. 2 (2002): 519-529. PubMed: 12206968.
7. Monath, T. P., et al. "A Live, Attenuated Recombinant West Nile Virus Vaccine." Proc. Natl. Acad. Sci. USA 103 (2006): 6694-6699. PubMed: 16617103.

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

