

**West Nile Virus, DAK AR MG 979**

**Catalog No. NR-49919**

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

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Virus Classification: *Flavivirus, Flaviviridae*

Species: West Nile Virus

Strain/Isolate: DAK AR MG 979

Original Source: West Nile virus (WNV), DAK AR MG 979 was isolated from a *Culex quinquefasciatus* mosquito in Anjiro, Madagascar, on February 12, 1988 and contributed to WRCEVA by the Yale Arbovirus Research Unit, Rockefeller Funded Collection, Yale University, New Haven, Connecticut, USA.<sup>1,2</sup>

Comments: WNV, DAK AR MG 979 is a lineage 2 isolate.<sup>2,3</sup> The complete genome of WNV, DAK AR MG 979 has been sequenced (GenBank: [HM147823](https://www.ncbi.nlm.nih.gov/nuccore/HM147823)).<sup>2</sup> 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>4</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>5</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>6</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>7,8</sup> There is no established WNV-specific treatment or licensed vaccine for humans currently available.<sup>9</sup> Prevention depends on organized, sustained vector mosquito control and public education.<sup>8</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, DAK AR MG 979.

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

**Packaging/Storage:**

NR-49919 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 70% to 90% confluent

Incubation: 4 to 6 days at 37°C and 5% CO<sub>2</sub>

Cytopathic Effect: Cell rounding and detachment

**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, DAK AR MG 979, NR-49919."

**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).

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**References:**

1. Tesh, R. B., Personal Communication.
2. McMullen, A. R., et al. "Molecular Evolution of Lineage 2 West Nile Virus." J. Gen. Virol. 94 (2013): 318-325. PubMed: 231136360.
3. Prow, N. A., et al. "Virulence and Evolution of West Nile Virus, Australia, 1960-2012." Emerg. Infect. Dis. 22 (2016): 1353-1362. PubMed: 27433830.
4. Granwehr, B. P., et al. "West Nile Virus: Where Are We Now?" Lancet Infect. Dis. 4 (2004): 547-556. PubMed: 15336221.
5. 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.
6. Murray, K. O., et al. "West Nile Virus, Texas, USA, 2012." Emerg. Infect. Dis. 19 (2013): 1836-1838. PubMed: 24210089.
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. USA 103 (2006): 6694-6699. PubMed: 16617103.

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