

Zika Virus, PRVABC59

Catalog No. NR-50240

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Flaviviridae*, *Flavivirus*

Species: Zika virus

Strain/Isolate: PRVABC59

Original Source: Zika virus (ZIKV), PRVABC59 was isolated from the blood of a human in Puerto Rico in December 2015.¹

Comments: The complete genomic sequence of ZIKV, PRVABC59 has been determined (GenBank: [KU501215](#)).^{1,2} The complete coding sequence of NR-50240 lot 64112564 has also been determined (GenBank: [KX087101](#)).³ The E protein of the tissue culture grown ZIKV PRVABC59 isolate (GenBank: KX087101) has a valine to leucine mutation at position 330 relative to the original patient serum ZIKV PRVABC59 isolate (GenBank: KU501215). The ZIKV, PRVABC59 E-V330L mutant is shown to be less pathogenic in mice, with delayed mortality and decreased viral dissemination to eye and brain as compared to the original ZIKV PRVABC59 serum isolate.⁴

ZIKV is a member of the Spondweni serocomplex of mosquito-borne flaviviruses. ZIKV is vectored primarily by *Aedes* spp., but has also been isolated from *Anopheles*, *Eretmapodites*, and *Mansonia* mosquitoes.⁵ Phylogenetic analyses indicated that there are two major lineages of ZIKV, African and Asian.⁶ A third lineage circulating in West Africa was recently described.⁷

The first human infections with ZIKV were reported in Nigeria in 1954.⁸ Only sporadic infections were seen until 2007, when a large outbreak occurred in Yap State, Federated States of Micronesia.⁹ There was another large outbreak in French Polynesia in 2013, concomitant with a Dengue fever epidemic,^{10,11} and the virus has subsequently spread throughout the South Pacific.¹²⁻¹⁵ Autochthonous transmission of ZIKV in Brazil was reported early in 2015,^{16,17} and has since been reported in countries throughout Central America and the Caribbean. It seems likely that the Asian lineage of ZIKV was introduced into Brazil by travelers from one or more Pacific Island countries.¹⁸ The outbreak in the Americas has become the most widespread in history. Updates on areas with ongoing ZIKV transmission are

available online from the Centers for Disease Control and Prevention.¹⁹ An estimated 80% of human ZIKV infections are asymptomatic, and symptomatic disease is generally mild and characterized by fever, maculopapular rash, arthralgia, and nonpurulent conjunctivitis. However, ZIKV infections were confirmed in infants with microcephaly,^{20,21} outbreaks in Brazil and elsewhere have been accompanied by a marked increase in the number of children born with microcephaly,²² and sufficient evidence has since accumulated to infer a causative relationship between prenatal ZIKV infection and microcephaly and other severe brain anomalies.²³ The full teratogenic potential of ZIKV, the absolute and relative risks among infants exposed to ZIKV *in utero*, and factors that may modify these risks remain to be determined.

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Cercopithecus aethiops* kidney epithelial cells infected with ZIKV, PRVABC59.

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

Packaging/Storage:

NR-50240 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 76, clone E6; ATCC® CRL-1586™)

Growth Medium: Eagle's Minimum Essential Medium containing Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine and 1 mM sodium pyruvate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be 70% to 80% confluent; thaw virus rapidly in a 37°C water bath; adsorb diluted virus to cells for one hour at 37°C.

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

Cytopathic Effect: Cell rounding and detachment

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Zika Virus, PRVABC59, NR-50240."

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/bmbl5/index.htm.

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