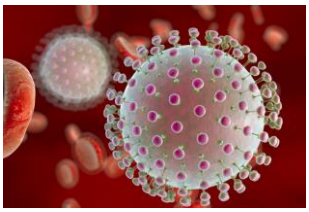
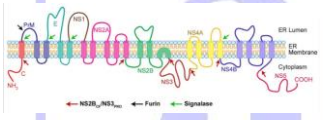
Zika Virus Envelope (Env) and NS1 Protein ELISA Kits

ADI's Zika Virus Antigen ELISA Kits - ADI has cloned and expressed Zika viral proteins (Envelope and NS1), raised polyclonal and monoclonal antibodies, and developed ELISA kits for the detection and measurement of Zika antigens. These ELISA kits will help develop and test Zika vaccines. ADI's antigen ELISAs are highly sensitive (~1 ng/ml) and assay can be performed in 2-3 hrs at room temperature. These products are for research use.



Zika virus was first isolated in 1947 from a monkey in Zika forest in Uganda. Zika virus has been known to infect humans since and a serological survey in 1952 found 50 people out of 84 had developed antibodies. Zika then spread to many African and Asian countries. Since April 2015, a large, ongoing outbreak of Zika virus that began in Brazil has spread to much of South and Central America and the Caribbean. Only 1 in 5 people (20%) show any symptoms whatsoever, and those usually involve a low-grade fever, sore body, headache, and sometimes a rash. Zika is causing an alarm because of its association with birth defects or microcephaly (small head or incomplete brain development) in newborn babies by mother-to-child transmission, as well as a stronger one with neurologic conditions in infected adults, including cases of **Guillain–Barré syndrome (GBS).** CDC found Zika in the brains of two babies with microcephaly and evidence of Zika in two pregnancies that ended in miscarriage.

Zika virus (ZIKV) is a member of the virus family Flaviviridae and the genus Flavivirus (*flavus* means yellow), transmitted by daytime-active Aedes mosquitoes, such as A. aegypti and A. albopictus. Zika virus is related to the dengue, yellow fever, Japanese encephalitis, and West Nile viruses. Like other flaviviruses, Zika virus is enveloped and icosahedral and has a non-segmented, positive-sense ss-RNA genome. There are two lineages of the Zika virus: The African lineage, and the Asian lineage. Phylogenetic studies indicate that the virus spreading in the Americas is most closely related to the Asian strain. Effective **vaccines** for yellow fever virus, Japanese encephalitis, and tick-borne encephalitis have been develop but there are **no vaccines for Zika virus**.

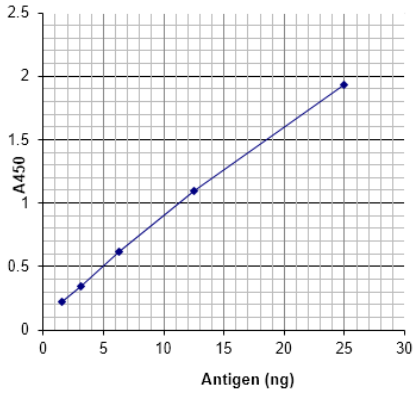


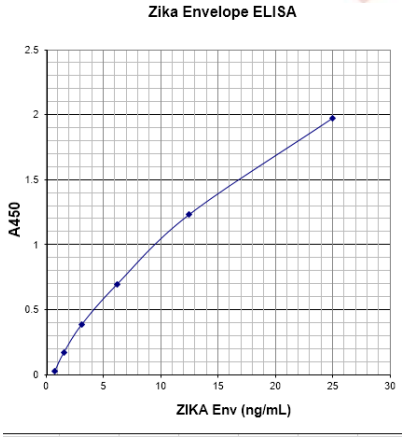
The Zika virus is a positive sense ss-RNA (25-30 nm, ~11kb). Zika virus genome codes for a polyprotein that is subsequently cleaved into capsid (**C**), precursor membrane (**prM**), envelope (**E**), and non-structural proteins (**NS**1-5). The E protein composes the majority of the virion surface and is involved with aspects of replication such as host cell binding and membrane fusion. NS1, NS3, and NS5 are large, highly-conserved proteins while the NS2A, NS2B, NS4A, and NS4B proteins are smaller, hydrophobic proteins. Like other flaviviruses, both structural and non-structural protein antibodies are detected during Zika virus infection. The member of flaviviruses share 40-60% protein sequence conservation. Vaccines have become available for JEV, YFV, and Dengue. Therefore, it is important to rule out the presence of Zika antibodies due to vaccination and/or infection from related viruses.

ADI's Zika antibody ELISA kits have been successfully used in Zika vaccine trials.

Larocca RA et al (2016) Nature. June 2016 (http://www.nature.com/nature/journal/vaap/ncurrent/full/nature18952.html)

Zika Virus Envelope and NS1 Protein ELISA Kits: Assay Protocol





Ordering Information

Cat# RV-403301-NS1-48 Zika Virus NS1 (ZIKV-NS1) protein ELISA kit for vaccine testing, 48 tests, Quantitative

Cat# RV-403001-ENV-48 Zika Virus (ZIKV) Envelope protein ELISA kit for vaccine testing, 48 tests, Quantitative

Step 1. Add 100µl of supplied recombinant Env and NS1 protein standards (1-50 ng/ml) into respective wells. Mix gently and incubate at room temp for 2 hrs mins (25-28oC; on orbital shaker).

Step 2. Aspirate well contents and wash 3X with wash buffer. Add 100 ul of supplied antibody-HRP Conjugate into all wells; mix gently and incubate for 60 mins (25-28oC; on orbital shaker).

Step 3. Aspirate or wash with 5x wash buffer. Tap plates over paper towels. Add 100ul of TMB Substrate. Mix gently and Incubate for 15 min at RT. Blue color develops in positive wells.

Step 4. Add100 ul of stop solution into each well and mix gently (blue color turns yellow). Measure yellow color at 450 nm. Sample values are calculated from the standard curve.

Zika-Env-NS1-Antigen-ELISA-Flr 160714A

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