

Anti-Envelope protein [ZKA64] Bulk Size Ab00779-2.3-BT

Recombinant monoclonal antibody to Envelope protein. Manufactured using AbAb's Recombinant Platform with variable regions (i.e. specificity) from the EBV transformed human B cell clone ZKA64. This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors. Made with Antibody Sequences licensed from Humabs Biomed SA.

Isotype and Format: Mouse IgG2a, [Fc Silent™](#), Kappa

Clone Number: ZKA64

Alternative Name(s) of Target: E protein; ZKV E

UniProt Accession Number of Target Protein: Q91KX7

Published Application(s): enhance, NTRL, ELISA, FC

Published Species Reactivity: Zika Virus

Immunogen: mAb ZKA64 was selected from EBV-immortalized memory B cells derived from ZIKV-infected, DENV-naïve human donors based on its ability to bind Zika virus (ZIKV) E protein and to neutralize ZIKV infection.

Specificity: ZKA64 binds specifically to the EDIII domain of the ZIKV envelope (E) protein. It does not cross-react with DENV E protein. Flavivirus E proteins mediate fusion, with EDIII being specifically involved in binding to cellular receptors. The ZIKV E protein has homology to that in Dengue virus (DENV) as well as other flaviviruses such as yellow fever and west Nile. ZIKV is a flavivirus that can be transmitted sexually, by the Aedes mosquito vector, or vertically to a developing fetus. Most cases of ZIKV infection are asymptomatic or manifest in mild symptoms, but in some cases ZIKV infection can result in Guillain-Barré Syndrome or congenital birth defects in developing fetuses.

Application Notes: ZKA64 is able to neutralize ZIKV with an IC50 of ~93 ng/ml. This antibody also enhances ZIKV infection in non-permissive K562 cells at a broad range of concentrations (but not above 1 µg/ml). The LALA format of ZKA64 (an Fc mutant variant that does not bind to Fc gamma receptors and only weakly to complement - similar to Absolute Antibody's Fc Silent™ format) is able to block enhancement of ZIKV infection by ZIKV-immune plasma from convalescent patients in K652 cell by the ADE (antibody-dependent enhancement) effect - this is due to the capacity of ZKA64 to out-compete serum enhancing antibodies and to neutralize ZIKV once internalized into endosomes. ZKA64-LALA is able to completely protect A129 mice from death and body weight-loss when administered with a lethal dose of ZIKV. Neutralization of ZIKV infection can be measured using a micro-neutralization FC-based assay, and binding/specificity to E protein can be studied by ELISA. Paul et al. (2016, PMID: 28090318) used the mouse

IgG2a version of this antibody (Ab00779-2.0) positive control for antibody-mediated virus neutralization.

Antibody First Published in: Stettler et al. Specificity, cross-reactivity and function of antibodies elicited by Zika virus infection. Science. 2016 Jul 14. pii: aaf8505. [PMID:27417494](https://pubmed.ncbi.nlm.nih.gov/27417494/)

Note on publication: Describes the isolation of a panel of antibodies derived from ZIKV-infected, DENV-naïve and ZIKV-infected, DENV-immune human donors. They were tested for their ability to bind to Zika E protein or NS1 as well as their cross-reactivity with the homologs in DENV. The capability to neutralize ZIKV infection was studied as well as the antibody-dependent enhancement effect on infection.

Product Form

Size: 1 mg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg /ml.

Important note - This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.