

## Anti-Envelope protein [ZKA64] Standard Size Ab00779-49.0

This antibody does not have a J-chain. Made with Antibody Sequences licensed from Humabs Biomed SA.

This reformatted ferret antibody was made using the variable domain sequences of the original Human IgG1 format, for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Ferret IgM

**Clone Number:** ZKA64

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

**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 K562 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](#)

**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:** 50 µg Purified antibody.

**Purification:** Affinity Purified using a recombinant lectin column

**Supplied In:** PBS with 0.02% Proclin 300.

**Storage Recommendation:** Store at 4°C for up to 3 months. 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.