Product Datasheet
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Chikungunya E1 Protein Antibody

Purified in vivo PLATINUM™ Functional Grade

Monoclonal Antibody

Product Information

Product No.:	C479
Clone:	CHK-166
Isotype:	Mouse IgG2c κ
Storage:	Sterile 2 to 8°C

Product Description

Specificity:
CHK-166 activity is directed against CHIKV E1.

Antigen Distribution:
E1 is expressed on the surface of CHIKV.

Background:
Chikungunya virus (CHIKV) is a mosquito-transmitted alphavirus that causes epidemics globally and has been declared a notable disease by the CDC1,2. CHIKV is an enveloped virus with an 11.8-kb single-stranded, positive-sense RNA genome with two open reading frames3,4. There are three main genotypes, having 95.2 to 99.8% amino acid identity: Asian, West African, and East/Central/South African (ECSA). The mature CHIKV virion is comprised of a nucleocapsid protein C and two glycoproteins, E1 and E25. E1 participates in virus fusion. E2 functions in attachment to cells. E1 and E2 form 80 trimeric spikes on the virus surface6.

CHK-166 is a neutralizing monoclonal antibody (MAb) that provides complete protection against lethality as prophylaxis in Ifnar−/− mice5. It was generated by infecting adult Irf7−/− C57BL/6 mice with the La Reunion 2006 OPY-1 strain of CHIKV (CHIKV-LR) and boosting with recombinant CHIKV E2 protein or infectious CHIKV-LR. Myeloma cell-splenocyte fusions were screened for binding to CHIKV-LR infected cells and the resulting MAb was cloned for analysis.

Neutralization escape variants were generated to map the CHK-166 epitope5. CHK-166 recognizes amino acids on domain II of E1, adjacent to the conserved fusion loop. All escape mutants had a single K61T mutation in the E1 protein.

CHK-166 inhibits CHIKV infection in cell culture in a post-attachment neutralization assay5. CHK-166 also protects 63% of mice from death when a single dose is administered 24 h after CHIKV infection. If both CHK-166 and CHK-152 are administered post-infection in mice, then viral resistance is prevented and the treatment window is extended5. Additionally, combination CHK-152/CHK-166 MAb therapy in rhesus macaques reduces viral infection and spread, neutralizes reservoirs of infectious virus, and does not produce escape viruses7.

Known Reactivity Species:
Mouse

Format:
Purified in vivo PLATINUM™ Functional Grade

Immunogen:
Chikungunya E1 protein

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Formulation
This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity
≥98% monomer by analytical SEC, >95% by SDS Page

Endotoxin
<0.5 EU/mg as determined by the LAL method

Storage and Stability
This antibody may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.
Avoid Repeated Freeze Thaw Cycles.

Product Preparation
Functional grade preclinical antibodies are manufactured in an animal free facility using in vitro cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Other Applications Reported in Literature:
N ELISA
FC

Country of Origin
USA

References
1) Barrera, R., Hunsperger, E., Lanciotti, RS. et al. Preparedness and response for chikungunya virus introduction in the Americas. Pan American Health Organization; National Center for Emerging and Zoonotic Infectious Diseases (U.S.). Division of Vector-Borne Diseases. 2011.
2) Silva, JVJ Jr., Ludwig-Begall, LF., Oliveira-Filho, EF. et al. Acta Trop. 188:213-224. 2018.
3) Powers, AM., Brault, AC., Tesh, RB. et al. J. Gen. Virol. 81:471–479. 2000.
4) Arankalle, VA., Shrivastava, S., Cherian, S. et al. J. Gen. Virol. 88:1967–1976. 2007.
5) Pal, P., Dowd, KA., Brien, JD. et al. PLoS Pathog. 9(4):e1003312. 2013.
6) Mukhopadhyay, S., Zhang, W., Gabler, S. et al. Structure. 14(1):63-73. 2006.
7) Pal, P, Fox, JM., Hawman, DW. et al. J Virol. 88(15):8213-8226. 2014.

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