Leinco Technologies, Inc.
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Dengue Virus Antibody

Purified No Carrier Protein

Recombinant Monoclonal Antibody

Product Information

Product No.:	LT560
Clone:	DENV-1C19
Isotype:	Human IgG1
Storage:	Sterile 2 to 8°C

Product Description

Specificity:

DENV-1C19 activity is directed against the bc loop of domain II of the E glycoprotein adjacent to the fusion loop (FL), is quaternary structure dependent, and cross-reactive against DENV-1, 2, 3, 4.

DENV-1C19 exhibited ultrahigh neutralization potency against strains corresponding to all four DENV serotypes. Fine epitope mapping studies revealed that DENV-1C19 recognizes a novel conserved site known as the bc loop (amino acids 73-79) adjacent to the fusion loop (FL) of DENV E protein in the DI/II hinge region. The bc loop residues 73, 78, and 79 have been identified as critical residues by loss-of-function binding screens. DENV-1C19 does not directly bind the FL and was unable to bind to wild-type E protein of West Nile Virus. DENV-1C19 binding was also not affected by alterations in DII-FL residues in yeast surface display or shotgun mutagenesis screenings.

DENV-1C19 neutralizes DENV effectively and competes for binding against low-potency FL antibodies, which are believed to contribute to antibody-mediated disease1. When DENV-1C19 was tested in AG129 mice for protective efficacy, it reduced the level of viremia after sublethal virus challenge for DENV-1 and -2. DENV-1C19 was able to bind to four chimeric yellow fever-dengue vaccine viruses and detected all four serotypes equally in a dot plot[2].

Background:

Dengue virus (DENV) is the most common insect-transmitted virus to target humans, with an estimated 390 million infections annually1. DENVs are members of the Flaviviridae family and can be divided into four closely related but antigenically distinct serotypes2. They encode a single-stranded positive sense RNA genome and display 180 copies of envelope (E) glycoprotein and premembrane/membrane (prM/M) proteins. E glycoprotein is comprised of three structural domains, DI, DII, and DIII, and exists as a homodimer in the pre-fusion state on the mature virus particle. E undergoes multiple conformation changes during maturation and fusion.

Known Reactivity Species:

Dengue Virus

Expression Host:

HEK-293 Cells

Format:

Purified No Carrier Protein

Immunogen:

DENV-1C19 was generated as part of a large panel of cross-neutralizing human monoclonal antibodies derived from human subjects who were confirmed to have had DENV infection by testing their serum for the presence of antibodies that neutralized each of the DENV serotypes[1].

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Formulation
This recombinant 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
≥90% monomer by analytical SEC and SDS-Page

Storage and Stability
This antibody may be stored sterile as received at 2° to 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
Recombinant antibodies are manufactured in an animal free facility using only in vitro protein free 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:
ELISA
N
Dot

Country of Origin
USA

References
1) Smith SA, de Alwis AR, Kose N, et al. mBio. 4(6):e00873-13. 2013.
2) Lecouturier V, Berry C, Saulnier A, et al. Vaccine. 37(32):4601-4609. 2019.