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Antibody Datasheet / Certificate of Analysis

Product Name: Human IgG1 anti-Zika virus NS1

Antibody: This humanised IgG1 anti Zika virus NS1 monoclonal antibody has been prepared by chimerization from the mouse monoclonal antibody AbZIKVNS1-B4. The original variable domains of this antibody have been retained, whilst the constant regions have been replaced with human IgG1. The antibody is then expressed in HEK293 cells

Clone number: B4

Isotype: Human IgG1

Product code: MAB12122-100

Batch Number: TBC

Immunogen: Full length recombinant NS1 protein of Zika virus produced in HEK293 cells (available from the Native Antigen Company, product code ZIKV-NS1-100)

Amount: 100µg

Concentration: TBC

Buffer: Phosphate Buffered Saline pH7.4

Preservative: None present. 0.2um filtered.

Fusion partners: The original antibody was made from spleen cells from immunised Balb/c mice fused with cells from the SP2/0-Ag14 myeloma cell line.

Purification: Antibody was purified from HEK293 cell culture supernatant by affinity chromatography on Protein G

Specificity: This antibody is specific for the NS1 protein of Zika virus, detecting NS1 from both the Uganda and Suriname strains. It demonstrates negligible cross-reactivity with NS1 proteins from Dengue virus (all serotypes), Japanese Encephalitis Virus and Yellow Fever Virus. A small amount of cross-reactivity has been observed with the NS1 protein from West Nile Virus in a direct ELISA (see AbZIKVNS1-B4 C of A).

Applications: The antibody is designed to provide a control for assays in which human serum is tested for antibodies specific for Zika NS1 protein, which will result from the immune response following an infection with Zika virus. The antibody has been tested in ELISA using recombinant Zika NS1 protein as the target antigen.

Antigen background: Zika virus is an emerging disease that is spread by *Aedes* mosquitoes. The virus was first isolated in Central Africa, and has since spread to South Asia and more recently to South America. It is a member of the flavivirus family, and is structurally closely related to viruses such as Dengue Fever Virus. Outbreaks were reported in Micronesia in 2007 and in Brazil in 2015, confirming at least 13 autochthonous infections. The Zika virus outbreak in Brazil in 2016 has gained world-wide attention, and has been linked to an increasing number of microcephaly cases. In April 2016 the Centers for Disease Control, in the USA, confirmed the link between Zika virus infection of the fetus with microcephaly.

Clinically Zika virus can cause mild fever, rash, myalgia, arthralgia and headaches, with one in four infected individuals being asymptomatic. Due to similar symptoms Zika virus infected individuals can easily be mis-diagnosed as a dengue infection and vice-versa. In addition, Zika virus has been implicated in causing microcephaly through transmission *in utero*. There is no vaccine or specific treatment available for Zika virus.

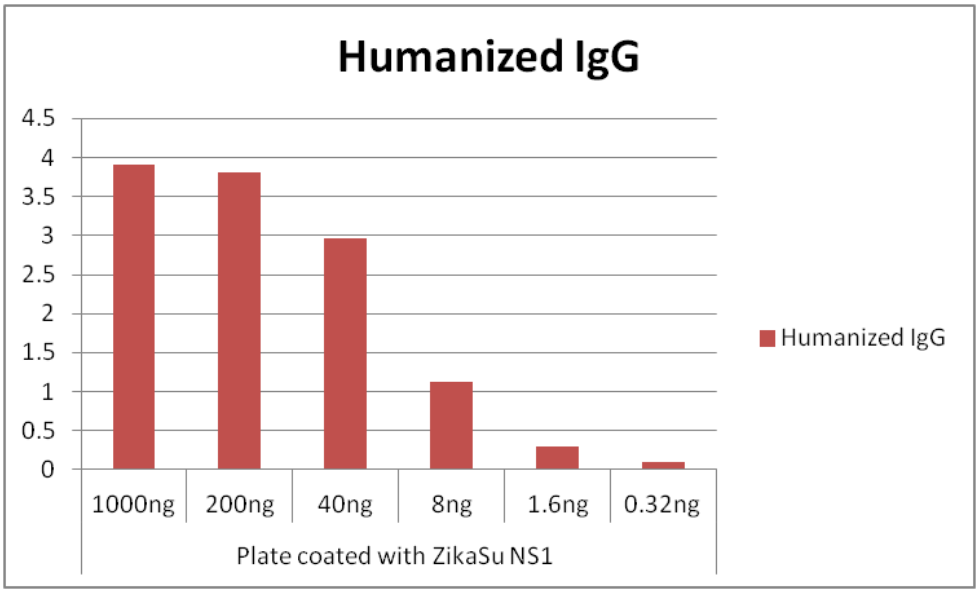
The NS1 protein is a major non-structural protein expressed by the Zika Virus. The NS1 monomer is a glycosylated protein of approximately 45kD, which associates with lipids and forms a homodimer inside infected cells. It is necessary for viral replication, and is also secreted into the extracellular space as a hexameric lipoprotein particle, which is involved in immune evasion and pathogenesis by interacting with components from both the innate and adaptive immune systems, as well as other host factors. NS1 is one of the major antigenic markers for viral infection with Zika.

Storage:

Store at +4^{0}C for up to one week, or at -20^{0}C for longer periods
For long term storage at +4^{0}C the addition of 0.09% w/v sodium azide is recommended.
The antibody is shipped at ambient temperature.
Avoid repeated freeze/thaw cycles.

Direct ELISA data

An ELISA plate was coated with 2ug/ml of NS1 antigen per well, then blocked with 5% BSA. Primary antibody was titrated as shown in the figure below, starting from a concentration of 1ug/ml, and the detection antibody used was Goat anti-human IgG:HRP (Bio-Rad, 1:8000). The substrate used was TMB (KPL).



Direct ELISA data

An ELISA plate was coated with 10ng and 100ng of NS1 antigen per well, then blocked with 1% BSA. Primary antibody was used at a concentration of 1ug/ml, and the detection antibody used was Goat anti-mouse IgG:HRP (Bio-Rad, 1:2000). The substrate used was TMB (KPL).