



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Zika Viral NS1 Protein
Catalog Number: vRP-1870
Manufacturer: LD Biopharma, Inc.

Introduction

Zika virus (ZIKV) is an arthropod-borne virus (arborivirus) in the genus *Flavivirus* and the family *Flaviviridae*. The *Flavivirus* genus includes other important human pathogens such as yellow fever (YFV), Dengue virus (DENV), West Nile, Japanese encephalitis (JEV), and tick borne encephalitis (TBEV). Flaviviruses are enveloped viruses with a single stranded, \approx 11 kb, positive-sense RNA genome, which encodes a single long open reading frame (ORF). The virus enters the host cell by receptor mediated endocytosis. Upon internalization and acidification of the endosome, fusion of viral and vesicular membranes allows release of the genomic RNA into the cytoplasm, which serves as mRNA. Translation of the single ORF at the rough ER produces a large polyprotein that is cleaved co- and posttranslationally into the mature proteins. The N-terminal of the polyprotein encodes the three structural proteins (C-prM-E), followed by at least seven non-structural (NS) proteins (NS1-NS2A-NS2B-NS3-NS4A-NS4B-NS5). Viral NS1 is a glycosylated 48-kD protein that plays a role in both viral replication and immune evasion. Secreted soluble ZIKV NS1 is found in patient serum during acute illness and is used as a diagnostic indicator of acute ZIKV infection. High levels of sNS1 are associated with increased disease severity.

Full-length Zika virus NS1 (352aa) encoding gene was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: Zika Virus: NS1
Accession Number: KJ776791.1
Species: Zika Virus
Size: 50 μ g / Vial



LD Biopharma, Inc.
9924 Mesa Rim Road Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.

Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.

Key References

Lindenbach BD, et al. *Flaviviridae: The viruses and their replication*; Fields Virology. Vol.1 pp: 1101–1152. (2007)

Gyurech D, et al. *False positive dengue NS1 antigen test in a traveler with an acute Zika virus infection imported into Switzerland*; Swiss Med Wkly. Feb 9; 146: w14296. (2016)

Moulin E, et al. *Simultaneous outbreaks of dengue, chikungunya and Zika virus infection: diagnosis challenge in a returning traveler with nonspecific febrile illness*; New Microbes New Infect. Feb 11; 11: 6-7. (2016)

Musso D, et al. *Zika Virus*. Clin Microbiol Rev. Jul; 29(3): 487-524. (2016).

Applications

May be used for specific antibody production or diagnostic applications.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFVGC SVDFSKKETRCGTGVFVYNDVEAWRDRYKYHP
DSPRRLAAAVKQAWEDGICGISSVSRMENIMWRSVEGELNAILEENG VQLTVVGVSVKNPMMWRG
PQRLPVPVNELPHGWKAWGKSYFVRAAKTNN SFVVDGDTLKECPLKHRAWNSFLVEDHGFVGFH
TSVWLKVREDYSLECDPAVIGTAVK GKEAVHSDLGWIESEKNDTWRLKRAHLIEMKTCEWPKS
HTLWTDGIEESDLIIPKSLAGPLSHHNTREGYRTQMKGPWHSEELEIRFE ECPGTKVHVEETCG
TRGPSLRSTTASGRVIEEWCCRECTMPPLSFR AKDGCWYGMEIRPRKEPESNLVRSMTAGS