



LD Biopharma, Inc.  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant West Nile Viral Capsid Protein  
**Catalog Number:** vRP-1868  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

West Nile (WNV) 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), Zika, Japanese encephalitis (JEV), and tick borne encephalitis (TBEV). Flaviviruses are enveloped viruses with a single stranded, <11 kb, positive-sense RNA genome, which encodes a single long open reading frame (ORF). This single ORF encodes a polyprotein that is cleaved into three structure proteins: the Capsid (C), premembrane/membrane (prM), and envelope (E) and seven non-structure proteins (NS1-NS2A-NS2B-NS3-NS4A-2K-NS4B and NS5). 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.

Full-length West Nile virus Capsid gene ( 103aa ) 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:** West Nile Virus: Capsid  
**Accession Number:** P06935 (Uniprot)  
**Species:** West Nile Virus  
**Size:** 50 µg / Vial  
**Composition:** 1.0 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.



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## Key References

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

Suchetana Mukhopadhyay, et al. *Structure of West Nile Virus*; Science. October: 10 , Vol 302; pp248. (2003)

Marine De Filette, et al. *Recent progress in West Nile virus diagnosis and vaccination*; Vet Res: 43(1); 16. (2012)

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)

## Applications

May be used for specific antibody production or diagnostic applications.

## Quality Control

Purity: > 90% by SDS-PAGE.

## Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGGEFSKKPGGPGKNRAVNMLKRGMPRGLSLIGLKRAMLS  
LIDGKGP IRFVLALLAFFRFTAIPTRAVLDRWRGVNKQTAMKHLLSFKKELGTLTSAINRRST  
KQKKR