

PRODUCT INFORMATION



Zika Virus NS1 Protein (strain Zika SPH2015) (recombinant)

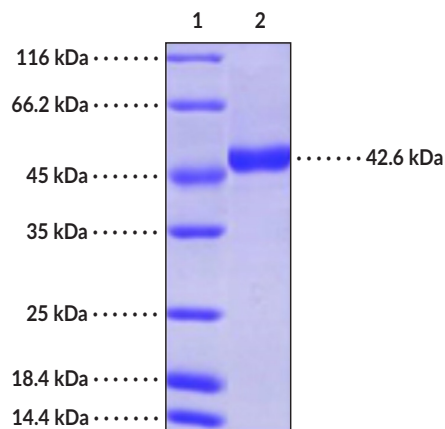
Item No. 41078

Overview and Properties

Synonyms:	Zika virus Non-Structural 1 Protein, Zika virus NS1, ZIKV-NS1 Protein
Source:	Recombinant Zika virus C-terminal His-tagged NS1 protein (strain Zika SPH2015) expressed in insect cells
Amino Acids:	796-1,157
Uniprot No.:	A0A0U3FSM8
Molecular Weight:	42.6 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, with 500 mM sodium chloride, pH 8.0, and 10% glycerol
Endotoxin Testing:	<1.0 EU/μg determined by the LAL endotoxin assay
Bioactivity:	See figure for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers

Lane 2: Zika Virus NS1 Protein (strain Zika SPH2015)

SDS-PAGE Analysis of Zika Virus NS1 Protein (strain Zika SPH2015). This protein has a calculated molecular weight of 42.6 kDa.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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Description

Zika virus (ZIKV) is a mosquito-borne, positive-stranded RNA virus and a member of the *Flavivirus* genus.^{1,2} ZIKV infection is associated with fever, rashes, and conjunctivitis, as well as more severe symptoms, which include Guillain-Barré syndrome in adults and microcephaly or congenital malformations in fetuses and newborns.^{1,3} The single-stranded RNA genome of ZIKV is translated as a polypeptide, which is cleaved by host and viral proteases into structural capsid (C), precursor membrane (prM), and envelope (E) proteins and seven non-structural proteins: NS1, NS2A, NS2B, NS3, NS4A, NS4B, and NS5.^{1,4} ZIKV NS1 protein is composed of an N-terminal β -roll, a flexible wing domain, and a C-terminal β ladder and is present in the endoplasmic reticulum (ER) as a flat, cross-shaped homodimer with a glycosylated hydrophilic side and a hydrophobic side that forms contacts with lipids and lipid membranes.⁵ It is secreted from the Golgi body as a homohexamer where it can form lipoprotein complexes and interfere with host cell immune signaling.⁵⁻⁷ ZIKV NS1 protein prevents retinoic acid-inducible gene I-induced phosphorylation of TANK-binding kinase 1 (TBK1) and IFN response factor 3 (IRF3), thus inhibiting IFN- β gene expression and secretion from infected host cells.⁶ It also promotes caspase 1-induced cyclic GMP-AMP synthase (cGAS) degradation, further reducing IFN- β signaling and allowing for continued replication of ZIKV in infected cells.⁷ Cayman's Zika Virus NS1 Protein (strain Zika SPH2015) (recombinant) protein consists of 361 amino acids, has a calculated molecular weight of 42.6 kDa, and a predicted N-terminus of Val296 after signal peptide cleavage.

References

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2. Hu, T., Wu, Z., Wu, S., *et al.* The key amino acids of E protein involved in early flavivirus infection: Viral entry. *Viol. J.* **18**(1), 136 (2021).
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7. Zheng, Y., Liu, Q., Wu, Y., *et al.* Zika virus elicits inflammation to evade antiviral response by cleaving cGAS via NS1-caspase-1 axis. *EMBO J.* **37**(18), e99347 (2018).

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