

PRODUCT INFORMATION



Zika Virus Envelope Protein (strain Zika SPH2015) (T366A, Q367G, W391R, L397R mutant; recombinant)

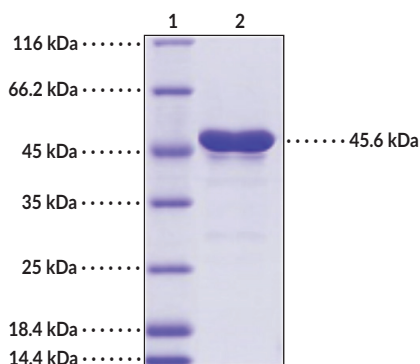
Item No. 41068

Overview and Properties

Synonyms: Zika Virus E Protein, ZIKV-E Protein, ZIKV Envelope Protein
Source: Recombinant Zika virus C-terminal His-tagged E protein expressed in insect cells
Amino Acids: 291-696
Uniprot No.: A0A0U3FSM8
Molecular Weight: 45.6 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥90% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile 20 mM Tris, 300 mM sodium chloride, pH 8.0, and 10% glycerol
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay
Protein
Concentration: *batch specific* mg/ml

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

Image



Lane 1: MW Markers

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

SDS-PAGE Analysis of Zika Virus Envelope Protein (strain Zika SPH2015). This protein has a calculated molecular weight of 45.6 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.

WARRANTY AND LIMITATION OF REMEDY
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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 E protein is composed of a structural domain, a dimerization domain, which contains a membrane fusion loop, and a structural domain containing a hinge region, two transmembrane helices, and a host receptor-binding region.² It is a homodimer in the viral membrane but transitions to a homotrimer state in host cell organelles with low pH, in which viral replication and assembly occurs, as well as where E protein can form a heterodimer with prM.⁴ ZIKV E protein glycosylation at an N-terminal asparagine is necessary for ZIKV infectivity and optimal replication in cells and mice.³ Cayman's Zika Virus Envelope Protein (strain Zika SPH2015) (T366A, Q367G, W391R, L397R mutant; recombinant) protein consists of 405 amino acids, has a calculated molecular weight of 45.6 kDa, and a predicted N-terminus of Ile291 after signal peptide cleavage.

References

1. Lei, J., Hansen, G., Nitsche, C., *et al.* Crystal structure of Zika virus NS2B-NS3 protease in complex with a boronate inhibitor. *Science* **353**(6298), 503-505 (2016).
2. Hu, T., Wu, Z., Wu, S., *et al.* The key amino acids of E protein involved in early flavivirus infection: Viral entry. *Virology* **18**(1), 136 (2021).
3. Carbaugh, D.L., Baric, R.S., and Lazear, H.M. Envelope protein glycosylation mediates Zika virus pathogenesis. *J. Virol.* **93**(12), e00113-e00119 (2019).
4. Dai, L., Song, J., Lu, X., *et al.* Structures of the Zika virus envelope protein and its complex with a flavivirus broadly protective antibody. *Cell Host Microbe*. **19**(5), 696-704 (2016).

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