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PRODUCT INFORMATION

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

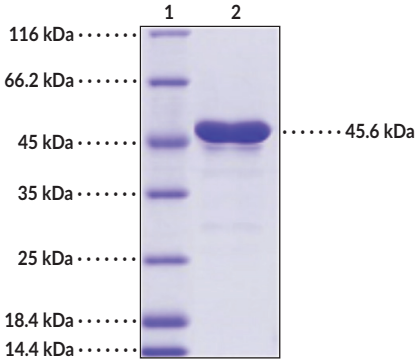
Item No. 41068

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.

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PRODUCT INFORMATION

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. *Virol. J.* **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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