QualityPlus - NS2B(A1394-L1440)-Linker-NS3(A1476-K1660)

DESCRIPTION

Our recombinant Dengue Virus NS2b-NS3 protease complex is of high, crystallography-grade quality and is well suited for researchers pursuing the development of antiviral therapeutics against Dengue, Zika, West Nile, and Yellow Fever viruses. The complex consists of the serine protease NS3 and its cofactor NS2B and is responsible for processing the viral polyprotein, a function essential for viral replication and the production of new viral particles.

Consequently, it represents a validated and attractive target for the development of inhibitors, for example, those targeting the active site of the NS2B-NS3 complex.

CONSTRUCT DESIGN

The construct design was was based on published structures in the Protein Data Bank (PDB ID: 4M9K): The construct includes the cytoplasmic cofactor region of NS2B spanning residues A1394-L1440, connected via a GGGG-S-GGGG linker to the NS3 protease domain which spans residues A1476-K1660. The NS2b region contains four mutations (T1402A, K1405R, D1407E, D1408E). Additionally, the construct contains an N-terminal overhang of six amino acids (GSHMLE) with the initial glycine remaining from the TEV cleavage site.

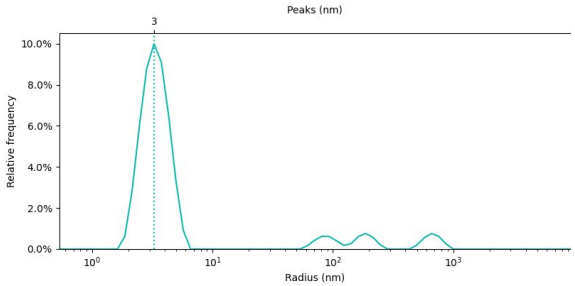
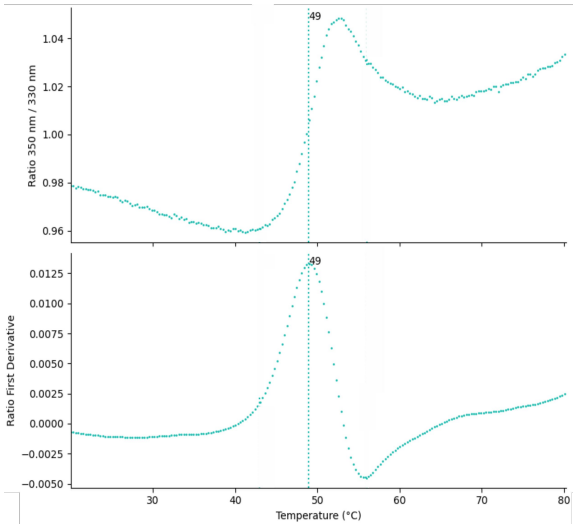
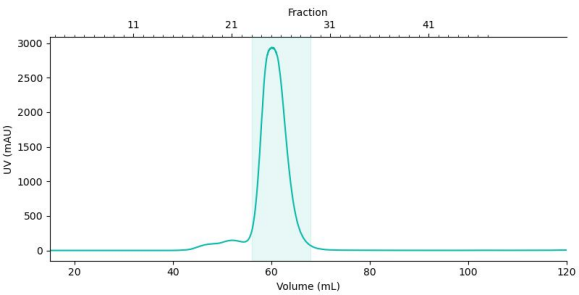
DATABASE INFORMATION

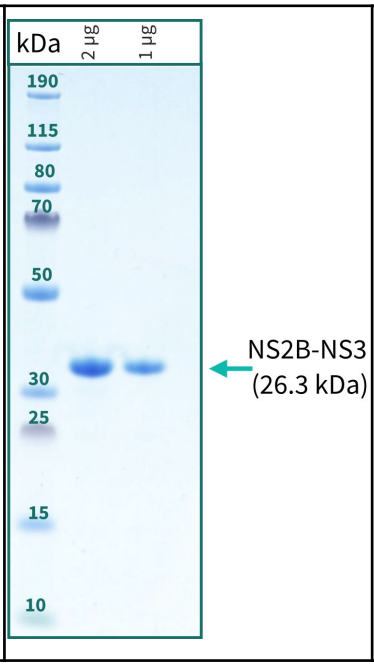
Uniprot ID	P12823
Protein accession	Q88646, Q88647, Q88648, Q88649, Q88650, Q88651, Q88652, Q88653, Q88654, Q88655
Gene name	dengue virus serotype 2
PDB	4M9K, 4M9M
Reference	Lee, Wen Hao Kenneth. (2021). doi: 10.1016/j.bpj.2021.04.015.

PRODUCT INFORMATION

Product Name	NS2B-NS3 GSHMLEA_A1394-L1440/GGGGSGGGG/A1476-K1660
Catalog Number	QPP00009
Host	E.Coli
Source	Viral
Tag	-
Sequence	GSHMLEADLELERAADVRWEEQAEISGSSPILSITISEDGSMSIKNEEEEQ TLGGGGSGGGGAGVLWDVPSPPPVGKAELEDGAYRIKQKGILGYSQIGAG VYKEGTFHTMWHVTRGAVLMHKGKRIEPSWADVKKDLISYGGGWKLEGE WKEGEEVQVLALEPGKNPRAVQTKPGLFKTNTGTIGAVSLDFSPGTSGSP IVDKKGKVVGLYGNGVVTRSGAYVSAIANTEKSIEDNPEIEDDIFRK
Molecular Weight	26.29 kDa
Isoelectric Point (pI)	5.03
Extinction coefficient (calculated)	41940 $M^{-1}cm^{-1}$
Applications	Crystallization
Additional Information	The Sequence is a part of the Genome polyprotein complex from Dengue virus type 2 (strain Puerto Rico/PR159-S1/1969) (DENV-2) with mutations in the NS2b region (T1402A, K1405R, D1407E, D1408E).

QualityPlus - ANALYTICS (LOT - CF00002)

DLS		The DLS histogramm of NS2B-NS3 shows a highly monodisperse protein sample with a hydrodynamic radius of 2.8 nm. Hyd. rad.: 2.88 nm PDI: 0.1
DSF		The nanoDSF plot shows the unfolding profile of NS2B-NS3 with a melting temperature of 49° C. The fluorescence ratio 350 nm / 330 nm is plotted against temperature. Tm: 47.48 °C Ton: 41.99 °C
SEC		Size Exclusion chromatography as final step of NS2B-NS3 purification (HiLoad S75 16/600, flow rate 1 mL/min). The cyane marked fractions were pooled for the final protein sample.
Intact mass		The mass peak corresponds with a deviation of 0.922 Da to the calculated mass. Calculated mass: 26281.294 Da Measured mass: 26280.3716 Da

SDS		Purity >95 % according to SDS analysis SDS-PAGE analysis of NS2B-NS3 (26.3 kDa) showing high purity of the protein sample (4-12% Bis-Tris, Coomassie stain)

LOT - #002 INFORMATION

Manufacturing date (MM/YY)	10/23
Storage buffer	50 mM Tris pH 8.5, 50 mM NaCl, 5% Glycerol
Format	Liquide
Purity	>95 % according to SDS analysis
Storage temperature	-20 °C short, -80 °C long term
Shelf life (with proper storage conditions)	Repeated QC with crystallization trial (01/26)
Endotoxin Level	n/a

SAFETY INFORMATION

This product is intended for **research purposes only** and not for diagnostic or therapeutic applications. Please observe applicable laboratory safety regulations. A Safety Data Sheet (SDS) is available upon request.

ORDERING INFORMATION

For orders please use our webshop. For further technical support or bulk orders, please contact our sales team via email on: webshop@crystalsfirst.com