Recombinant SARS-CoV S1 Subunit protein

Catalog Number: ATGP4012

PRODUCT INFORMATION

Expression system
HEK293

Domain
14-667aa

UniProt No.
P59594

NCBI Accession No.
NP_828851.1

Alternative Names
E2 glycoprotein precursor, Spike glycoprotein, S glycoprotein, E2, Peplomer protein, Severe acute repiratory Syndrome-related Coronavirus, SARS, SRAS-CoV, SARS-CoV1, spike protein S1

PRODUCT SPECIFICATION

Molecular Weight
73.7kDa(660aa)

Concentration
0.25mg/ml (determined by Absorbance at 280nm)

Formulation
Liquid. In Phosphate-Buffered Saline (pH 7.4) containing 10% glycerol

Purity
> 90% by SDS - PAGE

Endotoxin level
< 1 EU per 1ug of protein (determined by LAL method)

Biological Activity
Measured by its binding ability in a functional ELISA with Human ACE-2 (CAT# ATGP3963)

Tag
His-Tag

Application
SDS-PAGE, Bioactivity

Storage Condition
Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

BACKGROUND

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Description

Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV), and the recently identified novel Coronavirus (SARS-CoV-2) belong to the Coronaviridae family, genus Betacoronavirus, that has been related to important epidemiological outbreaks. SARS-CoV emerged in 2003 as a significant threat to human health. SARS-CoV has four structural proteins, known as the S (spike), E (envelope), M (membrane), and N (nucleocapsid) proteins. The spike protein, responsible for allowing the virus to attach to and fuse with the membrane of a host cell and is a large type I transmembrane protein containing two subunits, S1 and S2. S1 mainly contains a receptor binding domain (RBD), which is responsible for recognizing the cell surface receptor. S2 contains basic elements needed for the membrane fusion. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity. It attaches the virion to the cell membrane by interacting with host receptor, initiating the infection. A metallopeptidase, angiotensin-converting enzyme 2 (ACE-2), has been identified as a functional receptor for SARS-CoV through interaction with a receptor binding domain (RBD) located at the C-terminus of S1 subunit. Recombinant SARS-CoV spike S1 subunit fused to His-tag at C-terminus, was expressed in HEK293 cell and purified by using conventional chromatography techniques.

Amino acid Sequence

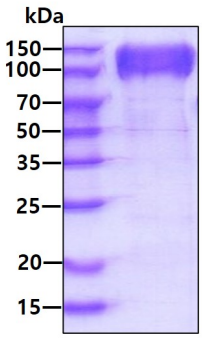
SDLDRCTTFD DVQAPNYTQH TSSMRGVYYP DEIFRSDTLY LTQDLFLPFY SNVTGFHTIN HTFGNPVIPF KDGIYFAATE KSNVVRGWVF GSTMNNKSQS VIIINNSTNV VIRACNFELC DNPFFAVSKP MGTQTHTMIF DNAFNCTFEY ISDAFSLDVS EKSGNFKHLR EFVFKNKDGF LYVYKGYQPI DVVRDLPSGF NTLKPIFKLP LGINITNFRA ILTAFSPAQD IWGTSAAAYF VGYLKPTTFM LKYDENGTIT DAVDCSQNPL AELKCSVKSF EIDKGIYQTS NFRVVPSGDV VRFPNITNLC PFGEVFNATK FPSVYAWERK KISNCVADYS VLYNSTFFST FKCYGVSATK LNDLCFSNVY ADSFVVKGDD VRQIAPGQTG VIADYNYKLP DDFMGCVLAW NTRNIDATST GNYNYKYRYL RHGKLRPFER DISNVPFSPD GKPCTPPALN CYWPLNDYGF YTTTGIGYQP YRVVVLSFEL LNAPATVCGP KLSTDLIKNQ CVNFNFNGLT GTGVLTPSSK RFQPFQQFGR DVSDFTDSVR DPKTSEILDI SPCAFGGVSV ITPGTNASSE VAVLYQDVNC TDVSTAIHAD QLTPAWRIYS TGNNVFQTQA GCLIGAEHVD TSYECDIPIG AGICASYHTV SLLR<HHHHHH>

General References

Kukla M., et al, (2020) J Clin Med. 9:1420.
Ayouba A., et al,(2020) J Clin Virol. 129:104521.
Tortorici, M.A. and D. Veesler (2019). Adv. Virus Res. 105:93-116.
Li F, et al, (2005) Science. 309:1864-1868.
Struck AW, et al, (2012) Antiviral Res. 94:288-296.

DATA

SDS-PAGE



3ug by SDS-PAGE under reducing condition and visualized by coomassie blue stain

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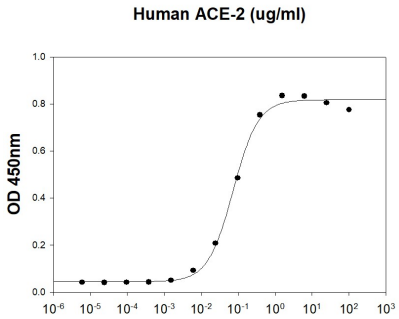
Biological Activity



SARS-CoV S1 Subunit is coated at 5 ug/ml (100 ul/well) can bind Human ACE-2 (CAT# ATGP3963) in a Functional ELISA assay.