Recombinant SARS-CoV-2 (2019-nCoV) Spike RBD protein

Catalog Number: ATGP3962

PRODUCT INPORMATION

Expression system
Baculovirus

Domain
319-541aa

UniProt No.
P0DTC2

NCBI Accession No.
QHD43416.1

Alternative Names
Severe acute respiratory syndrome coronavirus 2, COVID-19, COVID-19 virus, COVID19, HCoV-19, Human coronavirus 2019, SARS-2, SARS-CoV2, SARS2, Wuhan coronavirus, Wuhan seafood market pneumonia virus, SARS-CoV-2 SP RBD, 2019-nCoV SP RBD, 2019-nCoV, 2019-nCoV; Spike RBD Protein

PRODUCT SPECIFICATION

Molecular Weight
26.2kDa (232aa)

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

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

Purity
> 95% 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

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BACKGROUND

Description

An epidemic of acute respiratory syndrome in humans, which appeared in Wuhan, China in December 2019, was caused by a novel coronavirus (SARS-CoV-2). This disease was named as "Coronavirus Disease 2019" (COVID-19). This virus shares highly homological sequence with SARS-CoV, and causes acute, highly lethal pneumonia coronavirus disease 2019 (COVID-19) with clinical symptoms similar to those reported for SARS-CoV and MERS-CoV. The genome of this and other emerging pathogenic human CoVs encodes four major structural proteins [spike (S), envelope (E), membrane (M), and nucleocapsid (N)], approximately 16 nonstructural proteins (nsp1–16), and five to eight accessory proteins. Among them, the S protein plays an essential role in viral attachment, fusion, entry, and transmission. It comprises an N-terminal S1 subunit responsible for virus–receptor binding and a C-terminal S2 subunit responsible for virus–cell membrane fusion. S1 is further divided into an N-terminal domain (NTD) and a receptor-binding domain (RBD). SARS-CoV-2 and SARS-CoV bind angiotensin-converting enzyme 2 (ACE2) while MERS-CoV binds dipeptidyl peptidase 4 (DPP4), as receptors on the host cell expressing ACE2 (e.g., pneumocytes, enterocytes) or DPP4 (e.g., liver or lung cells including Huh-7, MRC-5, and Calu-3). During infection, CoV first binds the host cell through interaction between its S1-RBD and the cell membrane receptor, triggering conformational changes in the S2 subunit that result in virus fusion and entry into the target cell. Recombinant SARS-CoV-2 (2019-nCoV) Spike RBD, fused to His-tag at C-terminus, was expressed in insect cell and purified by using conventional chromatography techniques.

Amino acid Sequence

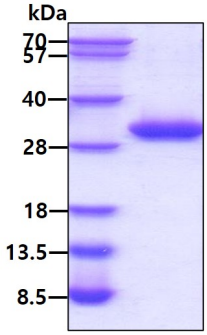
<ADP>RVQPTES IVRFPNITNL CPFGEVFNAT RFASVYAWNR KRISNCVADY SVLYNSASFS TFKCYGVSPT KLNDLCFTNV YADSFVIRGD EVRQIAPGQT GKIADYNYKL PDDFTGCVIA WNSNNLDSKV GGNYNYLYRL FRKSNLKPFE RDISTEIYQA GSTPCNGVEG FNCYFPLQSY GFQPTNGVGY QPYRVVVLSF ELLHAPATVC GPKKSTNLVK NKCVNF<HHHH HH>

General References

Wu, F. et al. (2020) Nature. 579:265-269.
Ortega, J.T. et al. (2020) EXCLI J. 19:410-417.
Wanbo T., et al, (2020) Cell. Mol. Immunol. 17:613-620.
Gorbalenya A., et al (2020) Nat. Microbiol. 5:536-544.
Tortorici, M.A. and D. Veesler (2019). Adv. Virus Res. 105:93-116.

DATA

SDS-PAGE



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

Biological Activity

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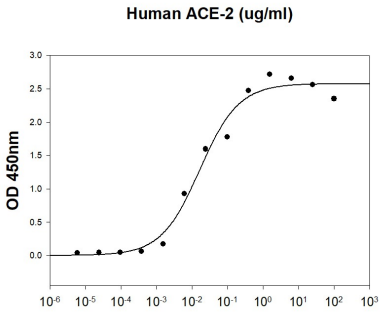

SARS-CoV-2 Spike RBD is coated at 5ug/ml (100 ul/well) can bind ACE-2 (CAT# ATGP3963) in a Functional ELISA assay.