

Spike Protein RBD

Catalog # PVGS1645

Specification

Spike Protein RBD - Product Information

Primary Accession **Species** SARS-CoV-2

PODTC2

Sequence

Arg319-Ser591 (L452R, T478K)

Purity

> 90% as analyzed by SDS-PAGE

Endotoxin Level

< 0.2 EU/ μg of protein by gel clotting method

Biological Activity

This protein is validated to bind with human ACE2 in functional ELISA assay.

Expression System

CHO

Theoretical Molecular Weight

33.7 kDa

Formulation

Supplied as a solution in PBS, pH 7.4.

Storage & Stability

Upon receiving, this product remains stable for up to 6 months at -20°C or below. Please avoid repeated freeze-thaw cycles.

Spike Protein RBD - Additional Information

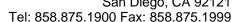
Gene ID 43740568

Other Names

 $\label{thm:condition} Spike glycoprotein \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Sglycoprotein \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Sglycoprotein \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Spike protein S1 \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Spike protein S2 \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Sglycoprotein S1 \\ \{ECO:0000255|HAMAP-Rule:MF_04099\}, Sglycoprotein S2 \\ \{ECO:0000$

Target Background

SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) also known as 2019-nCoV (2019 Novel Coronavirus) is a virus that causes illnesses ranging from the common cold to severe diseases. As of May 2021, three sublineages have been found. Despite its name, B.1.617.3 was the first sublineage of this variant to be detected, in October 2020 in India. This sublineage has





remained relatively uncommon compared to the two other sublineages, B.1.617.1 (also known as variant Kappa) and B.1.617.2 (also known as variant Delta), both of which were first detected in December 2020. This variant has the double mutations E484Q and L452R in the spike proteins. Emerging research suggests the variant may be more transmissible than previously evolved ones. Whether the effectiveness of currently-deployed vaccines is affected remains under investigation. Moreover, the sublineage B.1.617.2 has been redesignated as "variant of concern" (VOC-21APR-02) in May 2021, which spreads more quickly than the original version of the virus.

Spike Protein RBD - Protein Information

Name S {ECO:0000255|HAMAP-Rule:MF 04099}

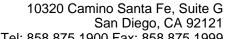
Function

[Spike protein S1]: Attaches the virion to the cell membrane by interacting with host receptor, initiating the infection. The major receptor is host ACE2 (PubMed: 32142651, PubMed:32155444, PubMed:33607086). When S2/S2' has been cleaved, binding to the receptor triggers direct fusion at the cell membrane (PubMed: 34561887). When S2/S2' has not been cleaved, binding to the receptor results in internalization of the virus by endocytosis using host TFRC and GRM2 and leading to fusion of the virion membrane with the host endosomal membrane (PubMed:32075877, PubMed:32221306, PubMed:34903715, PubMed:36779763). Alternatively, may use NRP1/NRP2 (PubMed:33082294, PubMed:33082293) and integrin as entry receptors (PubMed: 35150743). The use of NRP1/NRP2 receptors may explain the tropism of the virus in human olfactory epithelial cells, which express these molecules at high levels but ACE2 at low levels (PubMed: 33082293). The stalk domain of S contains three hinges, giving the head unexpected orientational freedom (PubMed:32817270).

Cellular Location

Virion membrane {ECO:0000255|HAMAP-Rule:MF 04099, ECO:0000269|PubMed:32979942}; Single-pass type I membrane protein {ECO:0000255|HAMAP-Rule:MF 04099, ECO:0000269|PubMed:34504087}. Host endoplasmic reticulum-Golgi intermediate compartment membrane {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:34504087}; Singlepass type I membrane protein {ECO:0000255|HAMAP-Rule:MF 04099}. Host cell membrane {ECO:0000255|HAMAP-Rule:MF 04099, ECO:0000269|PubMed:34504087}; Single-pass type I membrane protein {ECO:0000255|HAMAP-Rule:MF 04099}. Note=Accumulates in the endoplasmic reticulum-Golgi intermediate compartment, where it participates in virus particle assembly. Some S oligomers are transported to the host plasma membrane, where they may mediate cell-cell fusion (PubMed:34504087). An average of 26 +/-15 S trimers are found randomly distributed at the surface of the virion (PubMed:32979942) {ECO:0000255IHAMAP-Rule:MF 04099. ECO:0000269|PubMed:32979942, ECO:0000269|PubMed:34504087}

Spike Protein RBD - Protocols







Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- <u>Immunofluorescence</u>
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Spike Protein RBD - Images