

Spike protein RBD

Catalog # PVGS1574

Product Information

Primary Accession PODTC2
Species SARS-CoV-2

Sequence Arg319-Ser 591 (E484K, K417N, N501Y)

Purity > 90% as analyzed by SDS-PAGE

Endotoxin Level

Biological Activity SARS-CoV-2 Spike protein (RBD, E484K, K417N, N501Y, His & Avi Tag) can bind

with human ACE2 (Cat. No.: Z03484) in functional ELISA assay.

Expression System 293 Cells

Theoretical Molecular Weight 30 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. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID 43740568

Other Names Spike glycoprotein {ECO:0000255 | HAMAP-Rule:MF_04099}, S glycoprotein

{ECO:0000255 | HAMAP-Rule:MF_04099}, E2

{ECO:0000255 | HAMAP-Rule:MF_04099}, Peplomer protein {ECO:0000255 | HAMAP-Rule:MF_04099}, Spike protein S1 {ECO:0000255 | HAMAP-Rule:MF_04099}, Spike protein S2 {ECO:0000255 | HAMAP-Rule:MF_04099}, Spike protein S2'

{ECO:0000255|HAMAP-Rule:MF_04099}, S {ECO:0000255|HAMAP-Rule:MF_04099}

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. SARS-CoV-2 Spike Protein is composed of S1 domain and S2 domain. S1 contains a receptor-binding domain (RBD) that can specifically bind to angiotensin-converting enzyme 2 (ACE2), the receptor on target cells. It is believed that SARS-CoV-2 Spike

Protein (RBD) has potential value for the diagnosis of the virus.

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}; Single- pass 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:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:32979942, ECO:0000269 | PubMed:34504087}

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