

Spike protein S1
Catalog # PVGS1567

Specification

Spike protein S1 - Product Information

Primary Accession [P0DTC2](#)

Species
SARS-CoV-2

Sequence
Val16-Arg685

Purity
> 90% as analyzed by SDS-PAGE

Endotoxin Level
< 0.2 EU/ µg of protein by gel clotting method

Biological Activity
SARS-CoV-2 Spike protein (S1) can bind with Human ACE2 in functional ELISA assay.

Expression System
293 Cells

Theoretical Molecular Weight
79 kDa

Formulation **Supplied as a solution in PBS pH 7.2 containing 10% glycerol.**

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

Spike protein S1 - Additional Information

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. S protein plays an important role in the induction of

neutralizing antibodies and T-cell responses, as well as protective immunity.

Spike protein S1 - 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 leading to fusion of the virion membrane with the host endosomal membrane (PubMed:32075877, PubMed:32221306). 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}

Spike protein S1 - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)

- [Cell Culture](#)

Spike protein S1 - Images