SARS-CoV Spike/S1 Protein (S1 Subunit, His Tag), Biotinylated

Catalog Number: 40150-V0881-B

General Information

Gene Name Synonym:
coronavirus s1; coronavirus s2; coronavirus spike; cov spike; nccov RBD;
ncov s1; nccov s2; nccov spike; novel coronavirus RBD; novel coronavirus
s1; novel coronavirus s2; novel coronavirus spike; RBD; S1; s2; Spike
RBD

Protein Construction:
A DNA sequence encoding the S1 subunit of SARS-CoV (isolate:WH20)
is expressed with a C-terminal polyhistidine tag. The purified protein was
biotinylated in vitro.

Source: SARS

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE.

Endotoxin:
< 1.0 EU per μg protein as determined by the LAL method.

Stability:
Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Ser 14

Molecular Mass:
The recombinant S1 subunit of SARS-CoV (isolate:WH20) spike
comprises 665 amino acids and has a predicted molecular mass of 74.4
kDa.

Formulation:
Lyophilized from sterile PBS, pH 7.4.

Normally 5 - 8 % trehalose, mannitol and 0.01% Tween80 are added as
protectants before lyophilization. Specific concentrations are included in
the hardcopy of COA. Please contact us for any concerns or special
requirements.

Usage Guide

Storage:
Store it under sterile conditions at -20°C to -80°C upon receiving.
Recommend to aliquot the protein into smaller quantities for optimal
storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:
Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:

Protein Description

The spike (S) glycoprotein of coronaviruses contains protrusions that will
only bind to certain receptors on the host cell. Known receptors bind S1 are
ACE2, angiotensin-converting enzyme 2; DPP4, dipeptidyl peptidase-4;
APN, aminopeptidase N; CEACAM, carcinomaembryonic antigen-related cell
adhesion molecule 1; Sia, sialic acid; O-ac Sia, O-acetylated sialic acid.
The spike is essential for both host specificity and viral infectivity. The term
‘peplomer’ is typically used to refer to a grouping of heterologous proteins
on the virus surface that function together. The spike (S) glycoprotein of
 coronaviruses is known to be essential in the binding of the virus to the
host cell at the advent of the infection process. It's been reported that
SARS-CoV-2 (COVID-19 coronavirus, 2019-nCoV) can infect the human
respiratory epithelial cells through interaction with the human ACE2
receptor.
The spike protein 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. This S protein plays key
parts in the induction of neutralizing-antibody and T-cell responses, as well
as protective immunity.
The main functions for the Spike protein are summarized as: Mediate
receptor binding and membrane fusion; Defines the range of the hosts and
specificity of the virus; Main component to bind with the neutralizing
antibody; Key target for vaccine design; Can be transmitted between
different hosts through gene recombination or mutation of the receptor
binding domain (RBD), leading to a higher mortality rate.

References
spike (S) glycoprotein of SARS CoV. Methods Mol Biol. 379: 127-35.