SARS-CoV-2 (2019-nCoV) Spike RBD(E484K)-His Recombinant Protein

Catalog Number: 40592-V08H84

General Information

Gene Name Synonym:

coronavirus spike; cov spike; ncov RBD; ncov s1; ncov s2; ncov spike; NCP-CoV RBD; NCP-CoV s1; NCP-CoV s2; NCP-CoV 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 SARS-CoV-2 (2019-nCoV) Spike RBD(E484K)-His Recombinant Protein (YP_009724390.1) (Arg319-Phe541(E484K)) was expressed with a polyhistidine tag at the C-terminus.

Source: 2019-nCoV

Expression Host: HEK293 Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE.

Bio-activity:

Immobilized ACE2 Protein, Human, Recombinant (mFc Tag)(Cat: 10108-H05H) at 2 μg/mL (100 μL/well) can bind SARS-CoV-2 (2019-nCoV) Spike RBD(E484K)-His(Cat:40592-V08H84), the EC_{50} of SARS-CoV-2 (2019-nCoV) Spike RBD(E484K)-His(Cat:40592-V08H84) is 7-42ng/mL.

Endotoxin:

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

Predicted N terminal: Arg 319

Molecular Mass:

The recombinant SARS-CoV-2 (2019-nCoV) Spike S1(Arg319-Phe541(E484K))-His Recombinant Protein consists of 234 amino acids and predicts a molecular mass of 26.5 kDa. As a result of glycosylation, it migrates as an approximately 34 kDa band in SDS-PAGE under reducing conditions.

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

Stability & Storage:
Samples are stable for twelve months from date of receipt at -20℃ to -80℃.

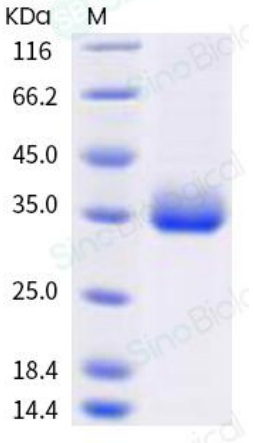
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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, carcinoembryonic 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. The 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

1.Shen S, et al. (2007) Expression, glycosylation, and modification of the spike (S) glycoprotein of SARS CoV. Methods Mol Biol. 379: 127-35.
2.Du L, et al. (2009) The spike protein of SARS-CoV--a target for vaccine and therapeutic development. Nat Rev Microbiol. 7 (3): 226-36.
3.Xiao X, et al. (2004) The SARS-CoV S glycoprotein. Cell Mol Life Sci. 61 (19-20): 2428-30.