



SARS-CoV-2 Spike S1 protein

receptor binding protein (RBD) - recombinant protein without His-tag

Product	Cat#	Package size
SARS-CoV-2 Spike S1 protein - receptor binding protein (RBD) - recombinant protein without His-tag	S5334.0100	100µg

Product Specifications

Protein:	SARS-CoV-2 S1 (RBD), (~ 25.2 kDa)
Sequence:	see next page
Source:	Recombinantly expressed in CHO cells
Tag(s):	no tag
Purification:	purified by affinity chromatography and subsequent buffer exchange.
Formulation:	PBS, pH7.4 liquid, sterile filtered (0.2µm), stored at -80°C, shipped on wet ice.
Purity:	>98% (measured by densitometry of Coomassie stained gel, see below)
Concentration:	1150µg/mL (total protein, determined by BCA-Assay).
Date of production:	batch specific - see product label
Long-term storage:	-20°C / -80°C
Comments:	Protein migrates at higher molecular weight during SDS-PAGE due to posttranslational modification.

Short product information

SARS-CoV-2 (2019-nCoV) Spike S1 Protein (RBD = receptor binding domain): The SARS-CoV-2 genome encodes for a spike protein, an envelope protein, an Introduction membrane protein, and a nucleoprotein. The spike (S) glycoprotein of coronaviruses is essential for binding of the virus to the host cell at the beginning of the infection process. Of particular note is the amino acid sequence Arg-Gly-Asp (RGD) at position 403-405 of the spike protein. These 3 amino acids are conserved in all known SARS-Co-2 viruses, but not in other types of coronaviruses.

Outside of SARS-CoV-2, the RGD sequence occurs particularly in proteins of the extracellular matrix (connective tissue), for example in fibronectin and vitronectin. This enables cells to bind to the RGD sequence with the help of certain cell surface receptors, the integrins. In addition to the SARS-CoV-2 viruses, well-known viruses such as HMPV, HCV or EBV also use the RGD to penetrate the cell.

The SARS-CoV-2 spike (S) glycoprotein is responsible for membrane fusion and is therefore required for cell fusion and virus entry. The spike protein is also a major immunogen and a possible target for inhibitors.

The SARS-CoV-2 spike (S) protein is a large type I transmembrane protein composed of two subunits, S1 and S2. The S1 subunit contains a receptor-binding domain (RBD) responsible for binding to the host cell receptor angiotensin-converting enzyme 2 (ACE2). The S2 subunit mediates fusion between the viral and host cell membranes. The S1 RBD protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity.



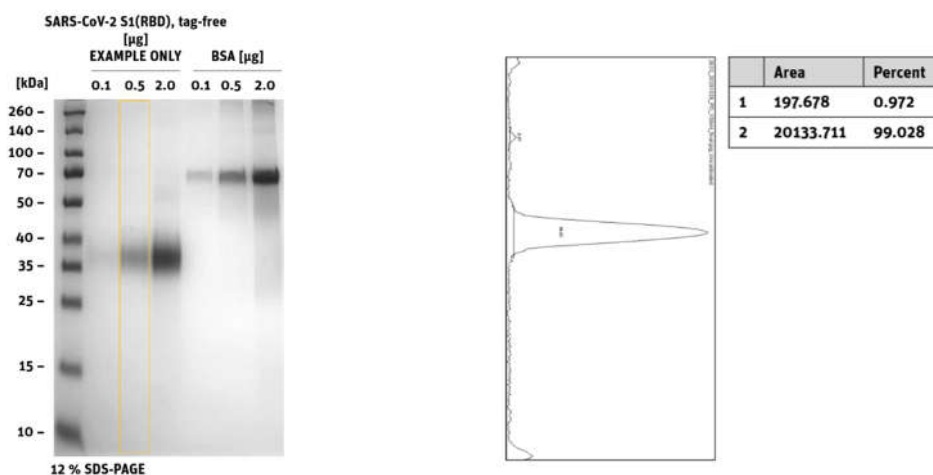
Sequence:

MRVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRRKRISNCVADYSVLYNSASFSTFKCYGVSPTKLNDLCFTNVYA
DSFVIRGDEVQRQIAPGQTGKIADYNYKLDDFTGCVIAWNSNNLDSKVGGNYYLYRLFRKSNLKPFRDISTEIYQAG
STPCNGVEGFNCYFPLQSYGFQPTNGVGYPYRVVLSFELLHAPATVCGPKKSTNLVKNKCVNF

Methionine at pos. 1 present due to cloning constraints, C-terminal His-tag not shown in sequence.

Quality control information

Exemplary SDS-PAGE / Coomassie and Histogram:



S1(RBD) with and without His-Tag are active.

