PRODUCT INFORMATION

SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain (rabbit IgG1 Fc-tagged)

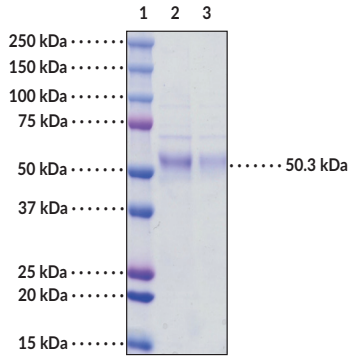
Item No. 30590

Overview and Properties

Synonyms:	SARS-CoV-2 Spike Receptor Binding Domain, S1 RBD, Severe Acute Respiratory Syndrome Coronavirus 2 Spike Glycoprotein Receptor Binding Domain, Spike S1 RBD
Source:	Active recombinant C-terminal rabbit IgG1 Fc-tagged SARS-CoV-2 surface glycoprotein receptor binding domain expressed in HEK293 cells
Amino Acids:	319-541
Uniprot No.:	P0DTC2
Molecular Weight:	50.3 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	≥85%
Supplied in:	PBS, pH 7.4, with 5% mannitol, 5% trehalose, 0.01% Tween 20, and 10% glycerol
Protein Concentration:	***batch specific*** mg/ml
Bioactivity:	SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain was captured on a Protein G Chip S series and tested for binding with gradient concentrations of ACE2 (12.5, 25, 50, 100, and 200 mM) in 10 mM HEPES pH 7.4, 150 mM NaCl, 3 mM EDTA, 0.05% surfactant P20 at 25°C. The K_D value was calculated using the 1:1 (Langmuir) binding model.

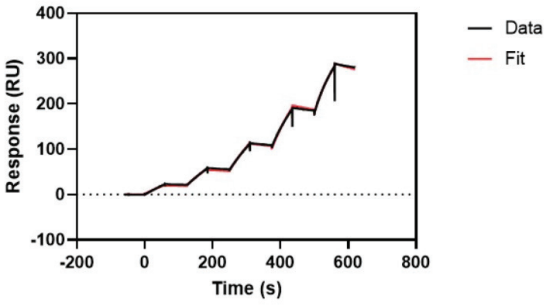
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: Marker band
Lane 2: SARS-CoV-2 spike glycoprotein (4 µg)
Lane 3: SARS-CoV-2 spike glycoprotein (2 µg)

SDS-PAGE Analysis of SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain (rabbit IgG1 Fc-tagged).



SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain Specifically Binds ACE2
SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain was captured on a Protein G Chip S series and SPR analysis was used to determine ACE2 (human, recombinant; Item No. 30587) binding affinity on a Biacore T200, using single cycle kinetics with five concentrations of ACE2.

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Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) surface glycoprotein, also known as the spike glycoprotein, is a viral structural protein encoded by the *S* gene in SARS-CoV-2 RNA.[1] SARS-CoV-2 is a member of the *Betacoronavirus* genus of viruses and has 88% sequence identity with two bat-derived SARS-like CoVs.[2] The SARS-CoV-2 genome contains approximately 30 kilobases that encode four structural proteins: spike, envelope, membrane, and nucleocapsid.[1,3] The spike protein of SARS-CoV-2 and the related viruses SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV) is a transmembrane glycoprotein that assembles into homotrimers on the virus surface and is comprised of an N-terminal S1 subunit, which contains the receptor binding domain (RBD), and a C-terminal S2 subunit, which facilitates fusion between viral and host cell membranes.[4-6] The 193-amino acid RBD of the SARS-CoV spike protein is a target for neutralizing antibodies.[5,7] The SARS-CoV-2 RBD, which spans amino acid residues 329 to 521, is 73% identical to that of SARS-CoV and can bind to human angiotensin-converting enzyme 2 (ACE2), which is the host cell surface receptor for both SARS-CoV and SARS-CoV-2.[4,6,7] SARS-CoV-2 is the causative agent of the COVID-19 respiratory illness characterized by fever, cough, and shortness of breath that can progress to pneumonia and potentially death in high-risk populations.[8] Cayman's SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain (rabbit IgG1 Fc-tagged) protein can used for ELISA, surface plasmon resonance (SPR), and Western blot (WB) applications.

References

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6. Walls, A.C., Park, Y.-J., Tortorici, M.A., *et al.* Structure, function, and antigenicity of the SARS-CoV-2 spike glycoprotein. *Cell* **181(2)**, 281-292 (2020).
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