Datasheet for ABIN6952547

Recombinant anti-SARS-CoV-2 Spike S1 antibody (RBD)

3 Images | 8 Publications

Go to Product page

Overview

Quantity:	200 µg
Target:	SARS-CoV-2 Spike S1
Binding Specificity:	RBD
Reactivity:	SARS Coronavirus-2 (SARS-CoV-2), SARS Coronavirus (SARS-CoV), SARS CoV-2 Alpha, SARS CoV-2 Epsilon, SARS CoV-2 Gamma, SARS CoV-2 Beta, SARS CoV-2 Eta, SARS CoV-2 Kappa
Host:	Rabbit
Antibody Type:	Recombinant Antibody
Clonality:	Chimeric
Application:	ELISA, Immunofluorescence (IF), Crystallization (Crys), Surface Plasmon Resonance (SPR)

Product Details

Purpose:	Recombinant monoclonal antibody to COVID-19 & SARS-CoV S glycoprotein.
Immunogen:	The original monoclonal antibody was generated by sequencing peripheral blood lymphocytes of a patient exposed to the SARS-CoV.
Clone:	CR3022
Isotype:	IgG kappa
Specificity:	The chimeric SARS-CoV S1 antibody (CR3022) binds the amino acids 318-510 in the S1 domain of the SARS-CoV Spike protein as well as SARS-CoV-2 (COVID-19) Spike protein. The antibody also binds to P462L-substituted S318-510 fragments of the SARS spike protein. The binding epitope is only accessible in the "open" conformation of the spike protein (Joyce et al. 2020). While most S-protein RBD binding antibodies compete for antigen binding with ACE2, the

Product Details

	CR3022 epitope does not overlap with the ACE2-binding site. It does thus not hinder binding of neutralizing antibodies. While CR3022 on its own exhibits only a weak neutralizing effect, it has been shown to synergize with other S-protein RBD binding antibodies to neutralize SARS-CoV. This effect still has to be confirmed in context with SARS-CoV-2 (Yuan et al. 2020).
Cross-Reactivity (Details):	The anti-SARS-CoV-2 antibody (CR3022) was originally discovered in a SARS patient, but it was shown to be a potent binder of SARS-CoV-2 spike protein (S1).
Characteristics:	OriginalSpeciesName: Human OriginalFormat: IgG1
Purification:	Protein A affinity purified

Target Details

Target:	SARS-CoV-2 Spike S1
Abstract:	SARS-CoV-2 Spike S1 Products
Target Type:	Viral Protein
Background:	Spike protein, COVID19, COVID 19, S protein, SARS-CoV S protein, S glycoprotein, E2, Peplomer protein, Spike protein S1, SARS Coronavirus, SARS-CoV-2, SARS CoV 2, 2019-nCoV
UniProt:	P59594

Application Details

Application Notes:	This antibody (CR3022) binds to both SARS-CoV and SARS-CoV-2 with high affinity. The initial characterization of the binding of this antibody was performed by ELISA and indicates potential for the development of diagnostic assays, as both virus-capture assays, or as controls in serological assays measuring immune-responses to virus exposure. Human IgG1, IgG3, IgM and IgA isotypes are available to mimic antibody responses seen in COVID19 (Amanat et al. 2020). Human IgG2 is available to assess its yet unknown role in the response to SARS-CoV-2. The original human IgG1 version of the antibody works synergistically in combination with another non-competing SARS antibody CR3014 and is a potential candidate for passive immune prophylaxis of SARS-CoV infection (Meulen et al., 2006). The original antibody (human IgG1) was also reported to bind the 2019-nCoV RBD (KD of 6.3 nM). This antibody has been attributed a potential to be developed as a therapeutic agent, alone or in combination with other neutralizing antibodies for treatment of 2019-nCoV infections (Tian et al., 2020).
Comment:	This chimeric rabbit antibody was made using the variable domain sequences of the original

Application Details

	Human IgG1 format, for improved compatibility with existing reagents, assays and techniques.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	1 mg/mL
Buffer:	PBS with 0.02 % Proclin 300.
Preservative:	ProClin
Precaution of Use:	This product contains ProClin: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	4 °C,-20 °C
Storage Comment:	Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

Publications

Product cited in:	Andrade, Pavan Kumar, Sridhar, Banurekha, Jawahar, Nutman, Sher, Babu: "Heightened plasma levels of heme oxygenase-1 and tissue inhibitor of metalloproteinase-4 as well as elevated peripheral neutrophil counts are associated with TB-diabetes comorbidity." in: **Chest**, Vol. 145, Issue 6, pp. 1244-54, (2014) (PubMed). There are more publications referencing this product on: Product page

Validation report #104432 for ELISA (ELISA)

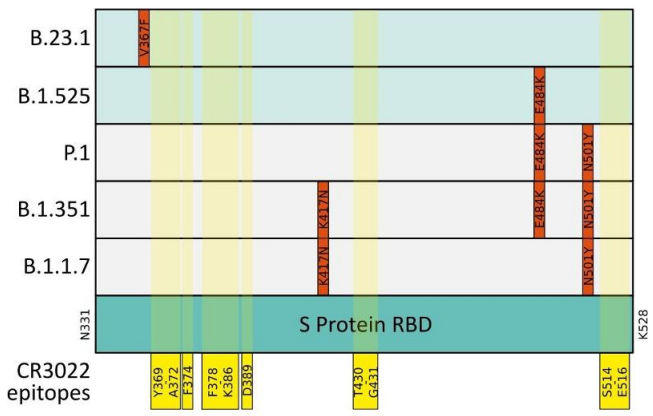
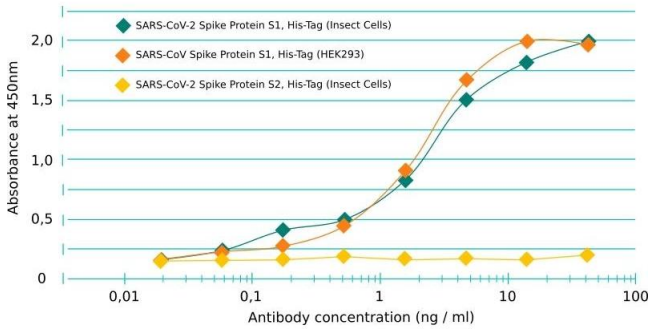
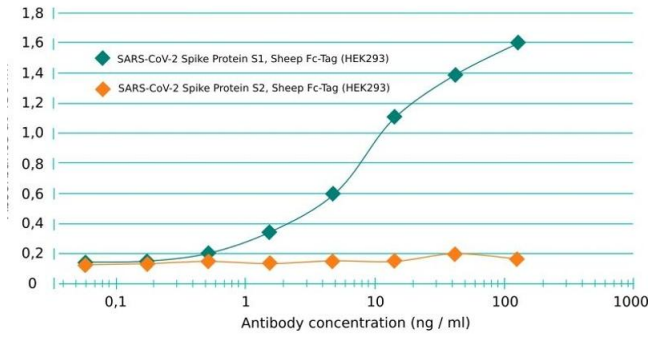


Image 1. Mutations (indicated in red) in the SARS-CoV-2 S Protein receptor binding domain (RBD, mint) in variants of concern (light grey) and variants of note (light mint). Epitopes of the neutralizing antibody CR3022 (ABIN6952547) are highlighted in yellow.



ELISA

Image 2. Binding curve of anti-COVID-19 & SARS-CoV S glycoprotein antibody CR3022 (ABIN6952546) to SARS-CoV-2 Spike Glycoprotein domains S1 and S2 of various origin. ELISA plate coated with SARS-CoV-2 Spike Glycoprotein (S1), His-Tag (Insect Cells; green line), SARS-CoV-2 Spike Glycoprotein (S2), His-Tag (Insect Cells; yellow line) and SARS Coronavirus Spike Glycoprotein (S1), His-Tag (HEK293 cells; orange line) at concentrations of 5 µg/ml. A 3-fold serial dilution from 41.6 ng/ml was performed using ABIN6952546. For detection, a 1:4000 dilution of HRP-labelled anti-human IgG antibody was used.



ELISA

Image 3. Binding curve of anti-COVID-19 & SARS-CoV S glycoprotein antibody CR3022 (ABIN6952546) to SARS-CoV-2 Spike Glycoprotein (S1), Sheep Fc-Tag and SARS-CoV-2 Spike Glycoprotein (S2), Sheep Fc-Tag from HEK293 cells. ELISA plate coated with SARS-CoV-2 Spike Glycoprotein (S1), Sheep Fc-Tag (green line) or SARS-CoV-2 Spike Glycoprotein (S2), Sheep Fc-Tag (orange line) from HEK293 cells at concentrations of 5 µg/ml. A 3-fold serial dilution from 125 ng/ml was performed using ABIN6952546. For detection, a 1:4000 dilution of HRP-labelled anti-human IgG antibody was used.