

Datasheet for ABIN6953042

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



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### 1 Image

#### Overview

Quantity:	50 µg
Target:	SARS-CoV-2 Spike S1
Binding Specificity:	RBD
Reactivity:	SARS Coronavirus-2 (SARS-CoV-2), SARS Coronavirus (SARS-CoV)
Host:	Human
Antibody Type:	Recombinant Antibody
Clonality:	Monoclonal
Conjugate:	This SARS-CoV-2 Spike S1 antibody is un-conjugated
Application:	ELISA, Immunofluorescence (IF), Surface Plasmon Resonance (SPR), Crystallization (Crys)

#### Product Details

Purpose:	Recombinant monoclonal antibody to COVID-19 & SARS-CoV S glycoprotein.
Immunogen:	The original monoclonal antibody was generated through an scFv library derived from a peripheral blood lymphocytes of a patient exposed to the SARS-CoV.
Clone:	CR3022
Isotype:	IgM kappa
Specificity:	<p>The 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).</p> <p>While most S-protein RBD binding antibodies compete for antigen binding with ACE2, the</p>

## 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: Original Species of Ab: Human  
Original Format of Ab: IgG1

Purification: Affinity Purified using a recombinant lectin column

## 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, Ab1680.10, Ab1680.15, Ab1680.16

UniProt: [P59594](#)

## Application Details

Application Notes: This antibody binds to both SARS-CoV and SARS-CoV-2 with high affinity (PMID: 16796401 & 32065055). 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 < a href="https://www.medrxiv.org/content/10.1101/2020.03.17.20037713v1" target="\_blank">(Amanat et al. 2020). Human IgG2 and IgG4 subtypes, which are also seen in a small subset of COVID-19 patients, are also available to investigate their role in the response to SARS-CoV-2. The original human IgG1 version of the antibody works synergistically in combination with another non-ompeting 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

Application Details

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). Bates et al. 2021 (PMID: 32766589) used CR3022 in a immunofluorescence assay.

Comment: This reformatted human antibody was made using the variable domain sequences of the original 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.

Validation report #104441 for Multiplex Immunohistochemistry (mIHC)

ELISA

**Image 1.** Binding curve of anti-COVID-19 & SARS-CoV S glycoprotein antibody CR3022 to SARS-CoV-2 Spike Glycoprotein domains S1 and S2 (His-Tag (Insect Cells)). ELISA plate coated with SARS-CoV-2 Spike Glycoprotein (S1), His-Tag (Insect Cells, grey line) and SARS-CoV-2 Spike Glycoprotein (S2), His-Tag (Insect Cells, green line) at concentrations of 5 µg/mL. A 3-fold serial dilution from 10000 ng/mL was performed using ABIN6953042. Human IgM is HRP-conjugated.

