



[Go to Product page](#)

Datasheet for ABIN6952546

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

1 Validation

15 Images

11 Publications

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, SARS CoV-2 Omicron, SARS CoV-2 Delta
Host:	Human
Antibody Type:	Recombinant Antibody
Clonality:	Monoclonal
Application:	ELISA, Immunofluorescence (IF), Crystallization (Crys), Surface Plasmon Resonance (SPR), Multiplex Immunohistochemistry (mIHC)

Product Details

Purpose:	Recombinant monoclonal antibody CR3022 to 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:	IgG1 kappa
Specificity:	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

Product Details

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 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 is available to mimic antibody responses seen in COVID19 (Amanat et al. 2020). 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).

Application Details

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

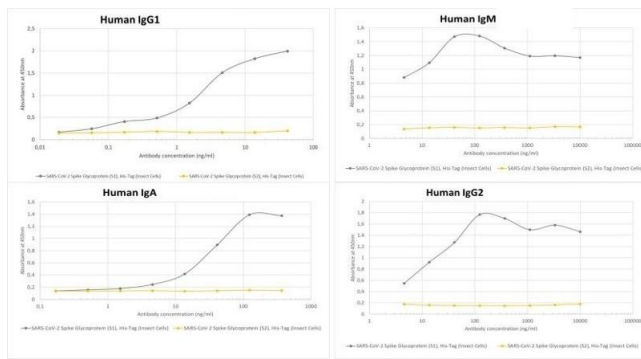
Product cited in: Ao, Chan, Ouyang, Olukitibi, Mahmoudi, Kobasa, Yao: "Identification and evaluation of the inhibitory effect of Prunella vulgaris extract on SARS-coronavirus 2 virus entry." in: **PLoS ONE**, Vol. 16, Issue 6, pp. e0251649, (2021) ([PubMed](#)).

Olaleye, Kaur, Onyenaka: "Ambroxol Hydrochloride Inhibits the Interaction between Severe Acute Respiratory Syndrome Coronavirus 2 Spike Protein's Receptor Binding Domain and Recombinant Human ACE2." in: **bioRxiv : the preprint server for biology**, (2020) ([PubMed](#)).

Olaleye, Kaur, Onyenaka, Adebusuyi: "Discovery of Clioquinol and Analogues as Novel Inhibitors of Severe Acute Respiratory Syndrome Coronavirus 2 Infection, ACE2 and ACE2 - Spike Protein Interaction In Vitro." in: **bioRxiv : the preprint server for biology**, (2020) ([PubMed](#)).

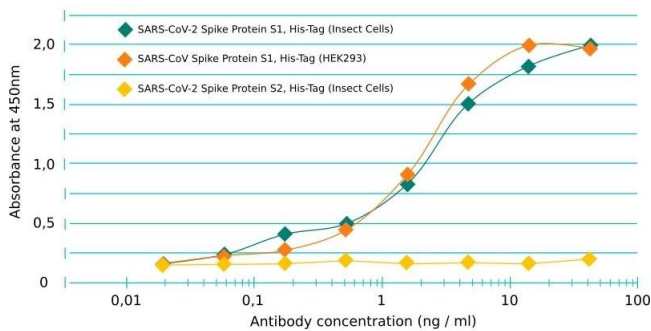
Aguilar-Pineda, Albaghdadi, Jiang, Lopez, Del-Carpio, Valdez, Lindsay, Malhotra, Lino Cardenas: "Structural and functional analysis of female sex hormones against SARS-Cov2 cell entry." in: **bioRxiv : the preprint server for biology**, (2020) ([PubMed](#)).

There are more publications referencing this product on: [Product page](#)



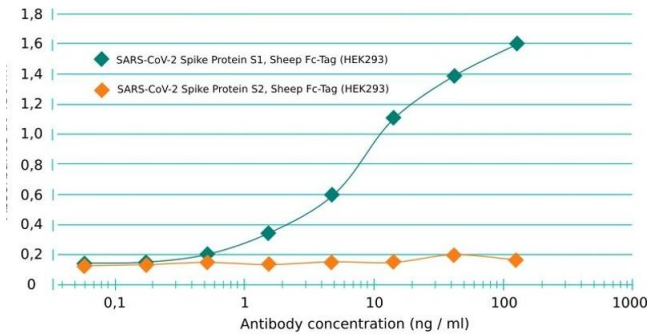
ELISA

Image 1. Binding curve of four different formats of anti-COVID-19 & SARS-CoV S glycoprotein antibody CR3022 (ABIN6952546) 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, yellow line) (Native Antigen) at concentrations of 5 µg/mL. A 3-fold serial dilution from 41.6 ng/mL was performed using ABIN6952546, from 370 ng/mL for ABIN6953047 and from 10000 ng/mL for ABIN6953042 and . Human IgM, human IgA and human IgG2 were HRP-conjugated and for the detection of human IgG1 a 1:4000 dilution of HRP-labelled anti-human IgG antibody was used.



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.

Please check the [product details page](#) for more images. Overall 15 images are available for ABIN6952546.



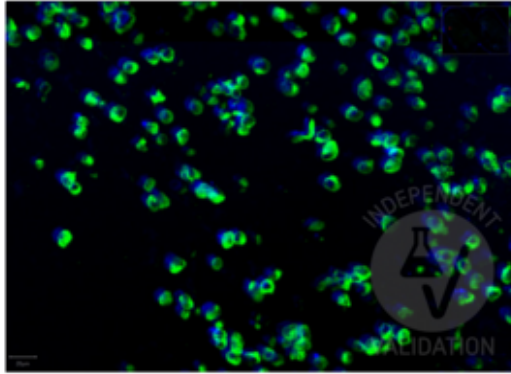
Successfully validated (Multiplex Immunohistochemistry (mIHC))

by [Akoya Biosciences](#)

Report Number: 104441

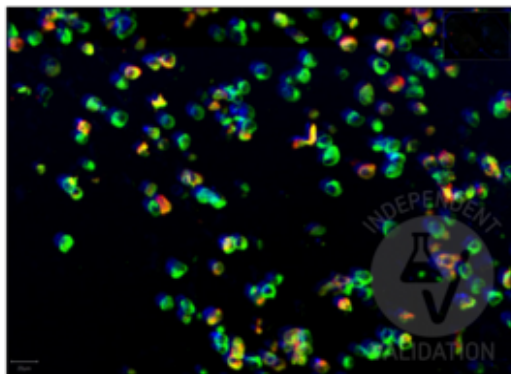
Date: Sep 13 2022

Target:	SARS-CoV-2 Spike S1
Lot Number:	T2023B03
Method validated:	Multiplex Immunohistochemistry (mIHC)
Positive Control:	FFPE cell pellets from in vitro cultured human lung cells infected with SARS-CoV-2
Negative Control:	SARS-CoV-2-negative placenta patient sample
Notes:	Passed. The anti-SARS-CoV-2 Spike S1 antibody RBD antibody ABIN6952546 produced staining in FFPE cell pellets from in vitro cultured human lung cells infected with SARS-CoV-2.
Primary Antibody:	ABIN6952546
Protocol:	<ul style="list-style-type: none">• Protocol details are described in the Akoya Biosciences CODEX® User Manual (see https://www.akoyabio.com/wp-content/uploads/2021/01/CODEX-User-Manual.pdf).• Tissue preparation as outlined in the Akoya Biosciences CODEX® User Manual FFPE tissue protocol.• Conjugation of the anti-SARS-CoV-2 Spike S1 antibody RBD antibody ABIN6952546 as described in Chapter 4 of the Akoya Biosciences CODEX® User Manual.• Autofluorescence quenching according to the Autofluorescence Quenching Protocol for CODEX® (see https://www.akoyabio.com/wp-content/uploads/2020/07/Customer-Demonstrated-Protocol-Autofluorescence-Quenching-Mar2020.pdf).



Validation image no. 1 for anti-SARS-CoV-2 Spike S1 (RBD) antibody (ABIN6952546)

Immunofluorescence of SARS-CoV-2 infection in FFPE cell pellets from in vitro cultured human lung cells infected with SARS-CoV-2. Anti-SARS-CoV-2 Spike S1 antibody RBD antibody ABIN6952546 is visualized with PhenoCycler reporters in green and DAPI-stained chromatin in blue.



Validation image no. 2 for anti-SARS-CoV-2 Spike S1 (RBD) antibody (ABIN6952546)

Immunofluorescence of SARS-CoV-2 infection in FFPE cell pellets from in vitro cultured human lung cells infected with SARS-CoV-2. Costaining with anti-SARS-CoV-2 Spike S1 antibody RBD antibody ABIN6952546 (green) and anti-SARS-CoV-2 Nucleocapsid Protein antibody ABIN6952544 (red).