Datasheet for ABIN6952546

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

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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
Conjugate:	This SARS-CoV-2 Spike S1 antibody is un-conjugated
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-

Product Details

	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 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

Application Details

	treatment of 2019-nCoV infections (Tian et al., 2020).
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

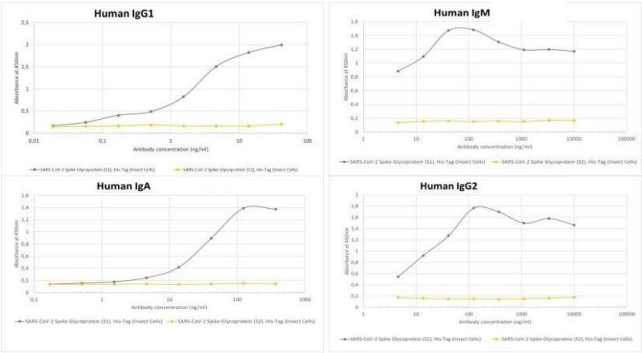
Product cited in:	Kannenberg, Trawinski, Henschler, Buhmann, Hönemann, Jassoy: "Antibody course and memory B-cell response in the first year after SARS-CoV-2 infection." in: **The Journal of infectious diseases**, (2022) (PubMed). Jacobsen, Fabricius, Class, Topfstedt, Lorenzetti, Janowska, Schmidt, Staniek, Zernickel, Stamminger, Dietz, Zellmer, Hecht, Rauch, Blum, Ludwig, Jahrsdörfer, Schrezenmeier, Heeg, Mayer, Seidel, Groß et al.: "High antibody levels and reduced cellular response in children up to one year after SARS-CoV-2 infection. ..." in: **Nature communications**, Vol. 13, Issue 1, pp. 7315, (2022) (PubMed). Hennrich, Sawatsky, Santos-Mandujano, Banda, Oberhuber, Schopf, Pfaffinger, Wittwer, Riedel, Pfaller, Conzelmann: "Safe and effective two-in-one replicon-and-VLP minispike vaccine for COVID-19: Protection of mice after a single immunization." in: **PLoS pathogens**, Vol. 17, Issue 4, pp. e1009064, (2021) (PubMed). Tian, Li, Huang, Xia, Lu, Shi, Lu, Jiang, Yang, Wu, Ying: "Potent binding of 2019 novel coronavirus spike protein by a SARS coronavirus-specific human monoclonal antibody." in: **Emerging microbes & infections**, Vol. 9, Issue 1, pp. 382-385, (2020) (PubMed).

Publications

Stadlbauer, Amanat, Chromikova, Jiang, Strohmeier, Arunkumar, Tan, Bhavsar, Capuano, Kirkpatrick, Meade, Brito, Teo, McMahon, Simon, Krammer: "SARS-CoV-2 Seroconversion in Humans: A Detailed Protocol for a Serological Assay, Antigen Production, and Test Setup." in: **Current protocols in microbiology**, Vol. 57, Issue 1, pp. e100, (2020) (PubMed).

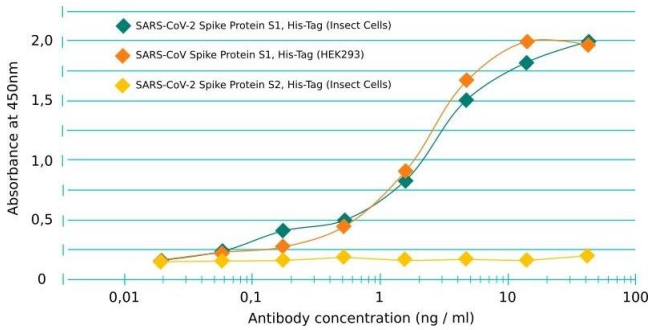
There are more publications referencing this product on: Product page

Validation report #101103 for Immunofluorescence (IF)



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

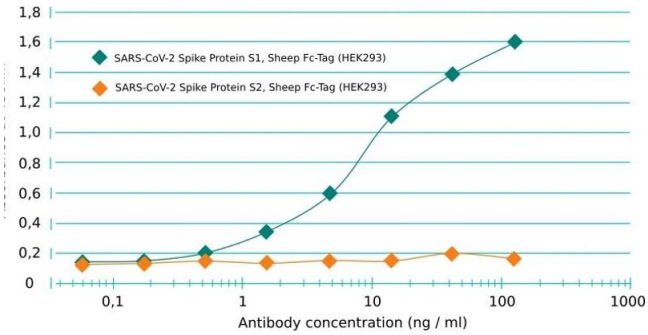


Image 3. Binding curve of anti-COVID-19 & SARS-CoV S glycoprotein antibody CR3022 (ABIN6952546) to SARS-CoV-2 Spike Glycoprotein (S1), Sheep Fc-Tag and SARS-CoV-2 Spike Glycoprotein (S2), Sheep Fc-Tag from HEK293 cells. ELISA plate coated with SARS-CoV-2 Spike Glycoprotein (S1), Sheep Fc-Tag (green line) 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.

Validation report #104441 for Multiplex Immunohistochemistry (mIHC)

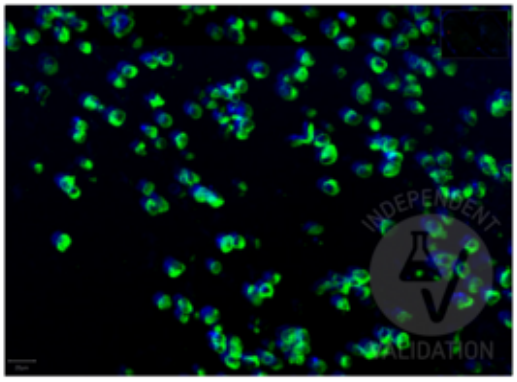
Successfully validated (Multiplex Immunohistochemistry (mIHC))

by Akoya Biosciences

Report Number: 104441

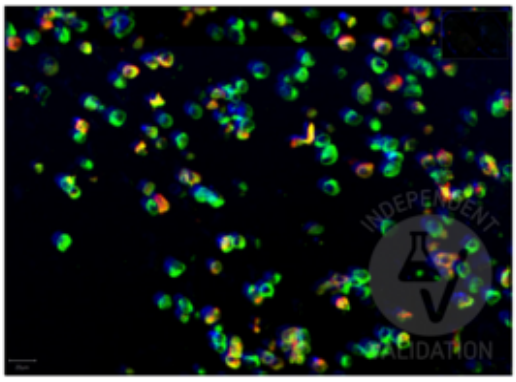
Date: Sep 13 2022

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:	• 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).