

PRODUCT INFORMATION



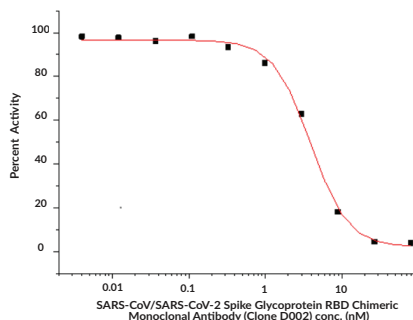
SARS-CoV/SARS-CoV-2 Spike Glycoprotein RBD Chimeric Monoclonal Antibody (Clone D002)

Item No. 31989

Overview and Properties

Contents:	This vial contains 50 or 100 μ l of protein A-affinity purified monoclonal antibody.
Synonyms:	SARS-CoV/SARS-CoV-2 Spike Protein, SARS-CoV/SARS-CoV-2 Spike Receptor Binding Domain, SARS-CoV/SARS-CoV-2 Spike RBD, SARS-CoV/SARS-CoV-2 Surface Glycoprotein Receptor Binding Domain, SARS-CoV/SARS-CoV-2 Surface Glycoprotein RBD, Severe Acute Respiratory Syndrome Coronavirus/Severe Acute Respiratory Syndrome Coronavirus 2 Spike Glycoprotein Receptor Binding Domain
Immunogen:	Recombinant C-terminal His-tagged SARS-CoV spike glycoprotein RBD
Cross Reactivity:	See page 2
Species Reactivity:	See page 2
Form:	Liquid
Storage:	-80°C (as supplied)
Stability:	\geq 1 year
Storage Buffer:	0.2 μ m filtered solution in PBS
Clone:	D002
Host:	Chimeric monoclonal antibody combining the constant domains of human IgG1k with variable regions from a mouse immunized with purified recombinant SARS-CoV spike glycoprotein RBD.
Isotype:	Human IgG1
Applications:	ELISA, Flow cytometry (FC), and Microneutralization (MN) assays; the recommended starting dilution is 1:5,000-1:10,000 for ELISA and 1:25-1:100 μ g/ml for FC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

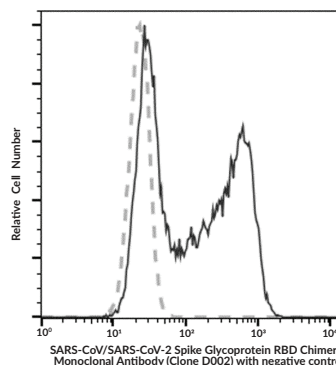
Images



Log dilutions of SARS-CoV/SARS-CoV-2 Spike Glycoprotein RBD Chimeric Monoclonal Antibody (Clone D002) were detected by SARS-CoV-2 (2019-nCoV) Inhibitor Screening ELISA Kit. The IC₅₀ value is typically 3.9 nM for the wild-type (WT) protein.

Conc. (μ g/mL)	Inhibition%
100	71.11%
10	7.16%
1	-21.63%
0.1	-40.40%

The neutralization activity is measured by microneutralization (MN) assay *in vitro*. The virus MN test was performed on 293T-ACE2 cells infected with SARS-CoV-2 Spike Glycoprotein Pseudovirus under treatment of serial dilutions of neutralizing antibody. The infection was neutralized by increasing concentrations of SARS-CoV/SARS-CoV-2 Spike Glycoprotein RBD Chimeric Monoclonal Antibody (Clone D002). Rate of inhibition was determined by comparing the relative light unit (RLU) of Luciferase reporter in different antibody concentrations. The IC₅₀ for the WT protein is typically 46.762 μ g/ml.



Flow cytometric analysis of SARS-CoV-2 Spike Glycoprotein overexpressed in HEK293 Cells.
Cells were stained with purified SARS-CoV/SARS-CoV-2 Spike Glycoprotein RBD Chimeric Monoclonal Antibody (Clone D002), then followed by a FITC-conjugated secondary antibody. The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact cells.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Reactivity

Cross Reactivity: (+) SARS-CoV-2 Delta (B.1.617.2) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Delta (B.1.617.2) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Delta (B.1.617.2) spike glycoprotein S1 subunit,
SARS-CoV-2 spike glycoprotein S1 subunit,
SARS-CoV spike glycoprotein S1 subunit;

(-) SARS-CoV-2 Omicron (BQ.1.1) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BF.7) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 (BA.4.6) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 (BA.2.75) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BA.2.75.2) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BA.1.1) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (B.1.1.529) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (B.1.1.529) spike glycoprotein S1 subunit,
SARS-CoV-2 Omicron (BA.2) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BA.2) spike glycoprotein S1 subunit,
SARS-CoV-2 Omicron (BA.2) spike glycoprotein S1 subunit NTD,
SARS-CoV-2 XD (BA.1 x AY.4) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Delta (B.1.617.2) spike glycoprotein S1 subunit NTD,
MERS-CoV spike glycoprotein S1 subunit,
HCoV-HKU1 (isolate N1) spike glycoprotein S1 subunit,
HCoV-HKU1 (isolate N5) spike glycoprotein S1 subunit,
HCoV-NL63 spike glycoprotein S1 subunit,
HCoV-229E spike glycoprotein S1 subunit,
HCoV-OC43 spike glycoprotein S1+S2 ECD

Species Reactivity: (+) SARS-CoV,
SARS-CoV-2,
SARS-CoV-2 Delta (B.1.617.2);

(-)SARS-CoV-2 Omicron (XBB),
SARS-CoV-2 Omicron (BQ.1.1),
SARS-CoV-2 Omicron (BA.4.6/BF.7),
SARS-CoV-2 (BA.2.75),
SARS-CoV-2 Omicron (BA.2.75.2),
SARS-CoV-2 (BA.2.3.20),
SARS-CoV-2 Omicron (BA.1.1),
SARS-CoV-2 Omicron (B.1.1.529),
SARS-CoV-2 Omicron (BA.2),
SARS-CoV-2 Omicron (BA.2.12.1),
SARS-CoV-2 Omicron (BA.4/BA.5/BA.5.2),
SARS-CoV-2 Omicron (BA.5)

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Description

Severe acute respiratory syndrome coronavirus (SARS-CoV) spike glycoprotein, also known as the surface glycoprotein, is a viral structural protein encoded by the S gene in SARS-CoV RNA that contains the receptor binding domain (RBD).¹ SARS-CoV is a member of the *Betacoronavirus* genus of viruses and has an approximately 79% sequence identity with SARS-CoV-2, the causative agent of COVID-19.^{2,3} SARS-CoV spike glycoprotein is a transmembrane glycoprotein that assembles into homotrimers on the virus surface and is composed 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 RBD, which spans amino acid residues 318 to 510, is 73% identical to that of SARS-CoV-2 and can bind to human angiotensin-converting enzyme 2 (ACE2), which is the host cell surface receptor for both SARS-CoV and SARS-CoV-2.⁴⁻⁷ SARS-CoV is the causative agent of SARS, a primarily respiratory illness characterized by fever, cough, shortness of breath, and an approximately 10% fatality rate.³ Cayman's SARS-CoV/SARS-CoV-2 Spike Glycoprotein RBD Chimeric Monoclonal Antibody (Clone D002) is composed of human IgG1k constant domains and variable regions from a mouse immunized with purified recombinant SARS-CoV spike glycoprotein RBD. It can be used for ELISA and flow cytometry (FC) applications, as well as microneutralization (MN) assays.

References

1. Kandeel, M., Ibrahim, A., Fayez, M., *et al.* From SARS and MERS CoVs to SARS-CoV-2: Moving toward more biased codon usage in viral structural and nonstructural genes. *J. Med. Virol.* **92(6)**, 660-666 (2020).
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