PRODUCT INFORMATION

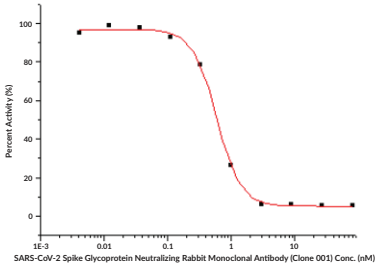
SARS-CoV-2 Spike Glycoprotein Neutralizing Rabbit Monoclonal Antibody (Clone 001)

Item No. 31803

Overview and Properties

Contents: This vial contains 100 µg of protein A-affinity purified monoclonal antibody.
Synonyms: SARS-CoV-2 Spike RBD, SARS-CoV-2 Spike Receptor Binding Domain, SARS-CoV-2 Surface Glycoprotein RBD, SARS-CoV-2 Surface Glycoprotein Receptor Binding Domain, Severe Acute Respiratory Syndrome Coronavirus 2 Spike Glycoprotein Receptor Binding Domain, Severe Acute Respiratory Syndrome Coronavirus 2 Surface Glycoprotein Receptor Binding Domain
Immunogen: Recombinant SARS-CoV-2 spike glycoprotein RBD (C-terminal mouse IgG1 Fc-tagged)
Cross Reactivity: See page 2
Species Reactivity: See page 2
Form: Liquid
Storage: -80°C (as supplied)
Stability: ≥1 year
Storage Buffer: 0.2 µm filtered solution in histidine and arginine with 120 mM sodium chloride, 0.02% Tween 80, and pH 6.0
Clone: 001
Host: Rabbit
Isotype: IgG
Applications: ELISA, Flow cytometry (FC), and Microneutralization (MN) assays; the recommended starting concentration is 0.1-0.2 µg/ml for ELISA and 10-40 µg/ml for FC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

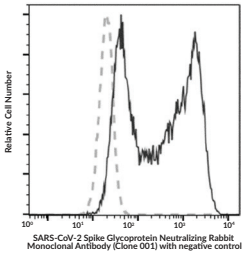
Images



Log dilutions of SARS-CoV-2 Spike Glycoprotein Neutralizing Rabbit Monoclonal Antibody (Clone 001) was detected by SARS-CoV-2 (2019-nCoV) Inhibitor Screening ELISA Kit. The IC_{50} value is typically 0.5-5 nM for the wild-type (WT) protein.

WT		Delta	
Conc. (µg/mL)	Inhibition%	Conc. (µg/mL)	Inhibition%
100	99.99%	100	100.00%
20	99.96%	20	100.00%
4	99.91%	4	99.99%
0.8	71.98%	0.8	97.57%
0.16	36.62%	0.16	50.76%
0.032	43.77%	0.032	17.36%
0.0064	24.65%	0.0064	2.53%

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 Pseudovirus, SARS-CoV-2 Spike Omicron (B.1.1.529) Pseudovirus, or SARS-CoV-2 Delta (B.1.617.2) variant Spike Pseudovirus, under treatment of log dilutions of neutralizing antibody. The infection was neutralized by increasing concentrations of SARS-CoV-2 Spike Glycoprotein Neutralizing Rabbit Monoclonal Antibody (Clone 001). Rate of inhibition was determined by comparing the Relative Light Unit (RLU) of luciferase reporter in different antibody concentrations. The IC_{50} values are 0.29 and 0.15 µg/ml for WT and Delta (B.1.617.2) variant spike pseudovirus, respectively. No neutralization activity to SARS-CoV-2 Spike Omicron (B.1.1.529) Pseudovirus was observed.



Flow cytometric analysis of SARS-CoV-2 spike glycoprotein overexpressed in HEK293 cells. Cells were stained with purified SARS-CoV-2 Spike Glycoprotein Neutralizing Rabbit Monoclonal Antibody (Clone 001), followed by a FITC-conjugated second step antibody. The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact cells.

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PRODUCT INFORMATION

Reactivity

Cross Reactivity: (+) SARS-CoV-2 (BA.2.75) 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-2 Omicron (BA.1.1) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (B.1.1.529) spike glycoprotein S1 subunit,
SARS-CoV-2 Omicron (B.1.1.529) S1+S2 trimer,
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 Omicron (BA.2.75.2) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 XD (BA.1 x AY.4) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 (BA.4.6) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BF.7) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Omicron (BQ.1.1) spike glycoprotein S1+S2 trimer,
SARS-CoV-2 Delta (B.1.617.2) spike glycoprotein S1 subunit NTD,
SARS-CoV spike glycoprotein S1 subunit,
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-2,
SARS-CoV-2 Delta (B.1.617.2),
SARS-CoV-2 (BA.2.75),
SARS-CoV-2 (BA.2.3.20),
SARS-CoV-2 Omicron (BA.1.1);

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

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Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an enveloped positive-stranded RNA virus, a member of the *Betacoronavirus* genus, and the causative agent of COVID-19.[1-5] The SARS-CoV-2 spike glycoprotein, also known as the surface glycoprotein, is located on the outer envelope of the virion.[1] It is composed of an S1 and S2 subunit divided by a furin S-cleavage site not found in other SARS-CoVs.[6,7] The S1 subunit contains the receptor-binding domain (RBD), which binds to the carboxypeptidase angiotensin-converting enzyme 2 (ACE2), and the S1 and S2 subunits are cleaved by the protease TMPRSS2 to facilitate viral fusion with the host cell membrane.[8-10] In this way, ACE2 acts as the functional receptor for SARS-CoV-2. SARS-CoV-2 infection can result in the production of neutralizing antibodies, which bind to the SARS-CoV-2 spike RBD preventing further viral entry and infection, starting approximately 4-10 days after symptom onset.[11,12] Cayman's SARS-CoV-2 Spike Glycoprotein Neutralizing Rabbit Monoclonal Antibody (Clone 001) disrupts the spike glycoprotein S1 subunit-ACE2 interaction and can be used for ELISA, and flow cytometry (FC) applications, as well as microneutralization (MN) assays.

References

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