abcam

ab284651

Anti-SARS-CoV-2 Spike RBD antibody [CA11] - BSA and Azide free

Recombinant | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Carrier free	Yes
Clone number	CA11
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Transfected cell line - SARS-CoV-2
Dilution info	0.01-1 µg/mL

Notes	-

Expected

Species	SARS-CoV-2
Dilution info	Use at an assay dependent concentration.
Notes	-

ELISA

Tested

Species	SARS-CoV-2
Dilution info	0.001-2 µg/mL
Notes	-

Not recommended

Species	Transfected cell line - SARS-CoV-2
Dilution info	-
Notes	-

SPR

Tested

Species	SARS-CoV-2
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell line - SARS-CoV-2
Dilution info	-
Notes	-

Target data

See full target information SARS-CoV-2 Spike RBD

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The SARS-CoV-2 Spike RBD also known commonly as the Receptor Binding Domain of the spike protein plays an important role in viral entry into host cells. This domain has a mass of approximately 21 kDa. It is located on the surface of the virus and facilitates binding to the host cell receptor primarily ACE2 which permits viral entry and replication. The Spike RBD is also a target for neutralizing antibodies which are essential in immune response against the virus. The domain displays various mutations particularly in variants of concern such as Omicron which can affect binding efficiency and immune evasion.
Biological function summary	The SARS-CoV-2 Spike RBD interacts directly with the host ACE2 receptor to mediate entry of the virus into host cells. This interaction is necessary for the virus to fuse with the host cell membrane which allows viral RNA to enter the host cell and begin replication. The Spike protein of which the RBD is a part forms a trimeric complex on the virus surface that is important for host interaction. Variations in the Spike RBD such as mutations like Arg319-Phe541 have significant impacts on the binding affinity to ACE2 and the effectiveness of vaccine-elicited antibodies.

Pathways	The Spike RBD of SARS-CoV-2 is vital in the entry pathway of the virus into the host cell. It is prominently involved in the ACE2-mediated signaling pathway with ACE2 playing the key role as the cellular receptor. This pathway is integral to the pathogenesis of COVID-19. Additionally the presence of the virus in host cells can trigger inflammatory pathways via infection-induced signaling cascades which can lead to exacerbated immune responses.
Associated diseases and disorders	The SARS-CoV-2 Spike RBD is inherently linked to COVID-19 pathogenesis. Variants such as Omicron have alterations within the RBD that may confer increased transmissibility and resistance to neutralizing antibodies. These mutations can influence disease severity and vaccine effectiveness. The interaction between the Spike RBD and ACE2 receptor underlies the symptomatic manifestations of COVID-19 including respiratory distress and systemic inflammation. The emergence of RBD-targeted therapeutics and vaccines addresses its critical role in infection aiming to block the binding and prevent disease progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

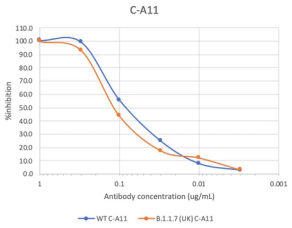
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

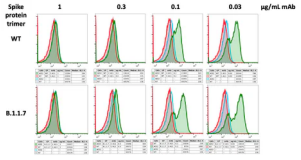
4 product images



Flow Cytometry - Anti-SARS-CoV-2 Spike RBD antibody [CA11] - BSA and Azide free (ab284651)

SARS-CoV-2 Spike RBD Flow Cytometry staining using rabbit Anti-SARS-CoV-2 Spike RBD antibody

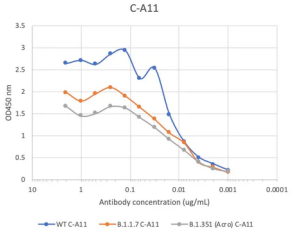
Flow cytomery neutralizing assay of ab284651 (plotted graphs): ACE2 transfected cells were incubated with biotinylated spike protein (0.5 ug/mL) in the presence or absence of antibody. Binding of spike protein was detected with DyLight488 conjugated StreptAvidin. ab284651 efficiently blocked the binding of wild type and UK variant (B.1.1.7) to ACE2 expressing HEK-293 cells.



Flow Cytometry - Anti-SARS-CoV-2 Spike RBD antibody [CA11] - BSA and Azide free (ab284651)

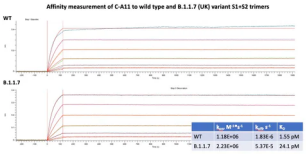
SARS-CoV-2 Spike RBD Flow Cytometry staining using rabbit Anti-SARS-CoV-2 Spike RBD antibody

Flow cytometry neutralizing assay: ab284651 displayed dose dependent blocking of spike proteins (wild type and UK variant) to ACE2 expressing cells.



ELISA - Anti-SARS-CoV-2 Spike RBD antibody [CA11] - BSA and Azide free (ab284651)

Binding of ab284651 to SARS-CoV-2 variants (UK and South Africa): ab284651 shows good cross reactivity to both variants B.1.1.7 (UK) and B.1.351 (S. Africa).



Surface Plasmon Resonance - Anti-SARS-CoV-2 Spike RBD antibody [CA11] - BSA and Azide free (ab284651)

Affinity assessment of ab284651 to wild type and B.1.1.7 (UK) S1+S2 trimers. ab284651 very low (pM) K_D to both variants.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.