abcam

ab272503

Anti-SARS-CoV-2 envelope protein antibody - Coronavirus

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Polyclonal
Purification technique	Affinity purification Immunogen
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	SARS-CoV-2
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

ELISA

Tested

Species	SARS-CoV-2
Dilution info	1 µg/mL
Notes	-

Target data

See full target information E

Function Plays a central role in virus morphogenesis and assembly. Acts as a viroporin and self-assembles in host membranes forming pentameric protein-lipid pores that allow ion transport. Also plays a role in the induction of apoptosis (By similarity). Regulates the localization of S protein at cis-Golgi, the place of virus budding (PubMed:33229438). May act by slowing down the cell secretory pathway (PubMed:33229438). May interfere with tight-junction stability by interacting with host MPP5. This would result in disruption of epithelial barriers, thereby amplifying inflammatory processes (PubMed:32891874).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

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

Activity summary The SARS-CoV-2 envelope protein also known as E protein is a small membrane protein with an approximate mass of 8.4 kDa. This protein integrates into the membrane of the virus and plays significant roles during the viral life cycle particularly in assembly and budding. Researchers identified its presence in the endoplasmic reticulum-Golgi intermediate compartment (ERGIC) where it participates in the formation of the viral envelope.

Biological function summary	The envelope protein acts as a viroporin forming ion channels that modulate the ionic environment necessary for the virus. It partakes in the viral assembly process and influences virus morphology. E protein also works in a complex with other structural proteins like the membrane (M) protein contributing to the virus's ability to infect host cells. This complex facilitates proper viral particle assembly and release.
Pathways	The envelope protein interacts with various cellular pathways that affect the host's immune response. It modulates pathways involved in inflammasome activation and cytokine production. For instance it affects NLRP3 inflammasome pathway which has close interactions with M protein and other viral components. By disrupting these pathways the envelope protein helps in avoiding host immune detection and promoting viral pathogenicity.
Associated diseases and disorders	The envelope protein relates to COVID-19 and its associated respiratory syndromes. Its role in the assembly and release of the virus links it to the severe respiratory symptoms seen in COVID-19 patients. Additionally this protein has connections to the host immune response interacting with proteins like the N protein which is involved in modulating severe inflammatory responses observed in COVID-19 cases. This makes the envelope protein a potential target for antiviral therapies and vaccine development.

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

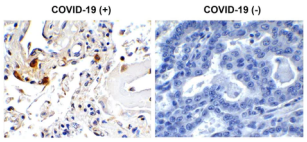
We do not recommend this combination. It is not covered by our product promise.

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.

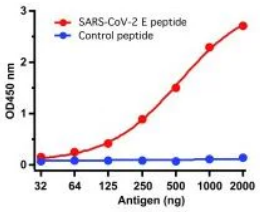
2 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SARS-CoV-2 envelope protein antibody - Coronavirus (ab272503)

SARS-CoV-2 envelope protein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SARS-CoV-2 envelope protein antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of COVID-19 patient lung tissue labeling SARS-CoV-2 envelope protein with ab272503 at 1 µg/mL. Tissue was blocked with 10% serum for 1 hour at room temperature. Heat mediated antigen retrieval was performed using citrate buffer pH 6. Samples were incubated with the primary antibody overnight at 4°C. An HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/250). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin. Strong positive signal observed in macrophage cells of COVID-19 patient lung but not in non-COVID-19 patient lung.



ELISA - Anti-SARS-CoV-2 envelope protein antibody - Coronavirus (ab272503)

A direct ELISA was performed using antigen or control peptide as coating antigen and ab272503 as the capture antibody at 1 µg/ml, followed by the secondary antibody goat anti-rabbit IgG HRP conjugate at 1/20000 dilution. Detection range was from 32ng/ml to 2000 ng/ml.