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SARS-CoV-2 (COVID-19) ORF8 Antibody

Infectious Disease, COVID-19
Catalog # ASC12223

Product Information

Application	WB, IHC, E
Primary Accession	P0DTC8
Other Accession	P0DTC8
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Clone Names	ORF8
Calculated MW	13831
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	WB: 1 µg/mL; IHC: 0.1 µg/mL Antibody validated: Immunohistochemistry in human samples. SARS-CoV-2 (COVID-19) ORF8 antibody can detect 2 ng of free peptide at 1 µg/mL in ELISA. It can detect SARS-CoV-2 ORF8 recombinant protein by ELISA and WB. All other applications and species not yet tested.

Additional Information

Gene ID	43740577
Other Names	ORF8 protein, ns8, ORF8, Non-structural protein 8
Target/Specificity	ORF8 Antibody is predicted to not cross-react with other coronavirus family members.
Reconstitution & Storage	SARS-CoV-2 (COVID-19) ORF8 antibody can be stored at 4˚C for three months and -20˚C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	SARS-CoV-2 (COVID-19) ORF8 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	8
Function	Plays a role in modulating the host immune response (PubMed: 31986261, PubMed:35343786, PubMed:36689483). May act as a secreted virokine by mimicking interleukin-17A (IL17A), and thereby binding to the IL17RA receptor, leading to activation of the IL17 pathway and increased secretion of pro-inflammatory factors (PubMed:35343786, PubMed:36689483).

	Contributes to the cytokine storm during SARS-CoV-2 infection when secreted by unconventional pathway (PubMed:33723527, PubMed:36689483). May act by down-regulating major histocompability complex class I (MHC-I) at cell surface (PubMed:34021074, PubMed:35157849). May inhibit expression of some members of the IFN-stimulated gene (ISG) family including hosts IGF2BP1/ZBP1, MX1 and MX2, and DHX58 (PubMed:34177923).
Cellular Location	Secreted. Note=Is secreted during a normal viral infection by unconventional pathway (PubMed:35157849, PubMed:36689483) Its mRNA is expressed in cytoplasm and not spliced during a viral infection, but is spliced when expressed from cDNA in nucleus (PubMed:35157849). Splicing changes localization to host endosome and/or cytoplasm (PubMed:33060197, PubMed:34177923). May also localize in nucleus when fused with GFP (PubMed:34177923)

Background

Coronavirus disease 2019 (COVID-19), formerly known as 2019-nCoV acute respiratory disease, is an infectious disease caused by SARS-CoV-2, a virus closely related to the SARS virus (1). The disease is the cause of the 2019–20 coronavirus outbreak (2). SARS-CoV-2 virus proteins include structural proteins, non-structural proteins and accessory factors. The structure of SARS-CoV-2 consists of the following: a spike protein (S), hemagglutinin-esterease dimer (HE), a membrane glycoprotein (M), an envelope protein (E) a nucleoclapid protein (N) and RNA. SARS-CoV-2 non-structural protein is ORF1ab that consists of 16 proteins (nsp1-nsp16), while accessory factors include ORF3a, ORF3b, ORF6, ORF7a, ORF7b, ORF8, ORF9b, ORF9c and ORF10. ORF8 may play a role in modulating host immune response (Probable). May play a role in blocking host IL17 cytokine by its interaction with host IL17RA (3).

References

Gorbalenya. bioRxiv: 2020.;Hui et al. Int J Infect Dis. 2020;91:264-266.;Chan et al. Lancet. 2020; 395:514-523.

Images

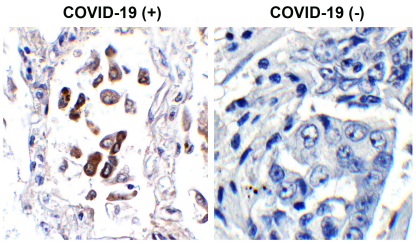
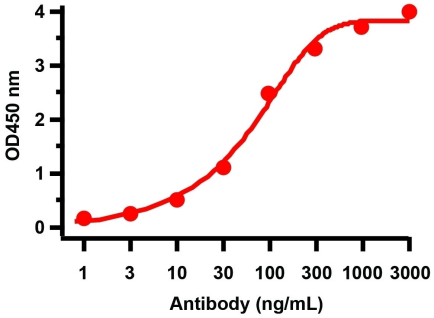


Figure 1 Immunohistochemistry Validation of SARS-CoV-2 (COVID-19) ORF8 in COVID-19 Patient Lung
Immunohistochemical analysis of paraffin-embedded COVID-19 patient lung tissue using anti- SARS-CoV-2 (COVID-19) ORF8 antibody (ASC12223, 0.1 µg/mL). Tissue was fixed with formaldehyde and blocked with 10% serum for 1 h at RT; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody overnight at 4˚C. A goat anti-rabbit IgG H&L (HRP) at 1/250 was used as secondary. Counter stained with Hematoxylin. Strong signal of SARS-COV-2 ORF8 protein was observed in macrophages of COVID-19 patient lung, but not in non-COVID-19 patient lung.

Figure 2 ELISA Validation with SARS-CoV-2 (COVID-19) ORF8 Protein
Antibodies: SARS-CoV-2 (COVID-19) ORF8 Antibody, ASC12223. A direct ELISA was performed using SARS-CoV-2 ORF8 recombinant protein (10-436) as coating antigen and the anti-SARS-CoV-2 (COVID-19) ORF8 antibody as the capture antibody. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:20000 dilution.



Detection range is from 1 ng/mL to 3000 ng/mL

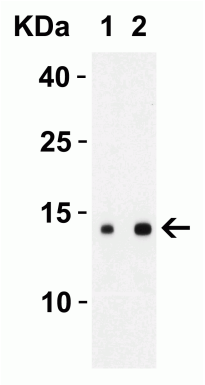


Figure 3 Western Blot Validation with SARS-CoV-2 (COVID-19) ORF8 Protein
Loading: 30 ng per lane of SARS-CoV-2 (COVID-19) ORF8 recombinant protein (10-436). Antibodies: SARS-CoV-2 (COVID-19) ORF8, ASC12223, 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10000 dilution. Lane 1: 1 µg/mL and Lane 2: 2 µg/mL

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