10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SARS-CoV-2 (COVID-19) NSP16 Antibody

Infectious Disease, COVID-19
Catalog # ASC12216

Product Information

Application	WB, IHC, E
Primary Accession	P0DTC1
Other Accession	YP_009725311
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Clone Names	NSP16
Calculated MW	489989
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IHC: 0.5 µg/mL; WB: 0.5 µg/mL Antibody validated: Immunohistochemistry in human samples. SARS-CoV-2 (COVID-19) NSP16 antibody can detect 2 ng of free peptide at 1 µg/mL in ELISA. It can detect SARS-CoV-2 NSP16 recombinant protein by ELISA and WB. All other applications and species not yet tested.

Additional Information

Gene ID	43740578
Other Names	2'-O-methyltransferase, nsp16, Non-structure protein 16
Reconstitution & Storage	SARS-CoV-2 (COVID-19) NSP16 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) NSP16 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	R1A
Function	[Replicase polyprotein 1a]: Multifunctional protein involved in the transcription and replication of viral RNAs. Contains the proteinases responsible for the cleavages of the polyprotein.
Cellular Location	[Host translation inhibitor nsp1]: Host cytoplasm [Papain-like protease nsp3]: Host endoplasmic reticulum membrane; Multi-pass membrane protein. Note=Localizes in virally-induced cytoplasmic double-membrane vesicles (DMV) [3C-like proteinase nsp5]: Host cytoplasm. Host Golgi apparatus. Host

nucleus. Host extracellular space. Note=Secreted into the host extracellular space through host caspase-activated GSDME [Non-structural protein 7]: Host cytoplasm, host perinuclear region {ECO:0000250|UniProtKB:P0C6X9}. Host cytoplasm. Host endoplasmic reticulum. Note=nsp7, nsp8, nsp9 and nsp10 are localized in cytoplasmic foci, largely perinuclear. Late in infection, they merge into confluent complexes. {ECO:0000250|UniProtKB:P0C6X9} [RNA-capping enzyme subunit nsp9]: Host cytoplasm, host perinuclear region {ECO:0000250|UniProtKB:P0C6X9}. Host cytoplasm Host endoplasmic reticulum. Note=nsp7, nsp8, nsp9 and nsp10 are localized in cytoplasmic foci, largely perinuclear. Late in infection, they merge into confluent complexes {ECO:0000250|UniProtKB:P0C6X9}

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). The structure of 2019-nCoV 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. Methyltransferase mediates mRNA cap 2'-O-ribose methylation to the 5'-cap structure of viral mRNAs. N7-methyl guanosine cap is a prerequisite for binding of nsp16. Therefore plays an essential role in viral mRNAs cap methylation which is essential to evade immune system.

References

Gorbalenya. bioRxiv: 2020.;Hui et al. Int J Infect Dis. 2020;91:264-266.

Images

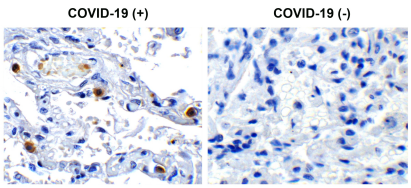


Figure 1 Immunohistochemistry Validation of SARS-CoV-2 (COVID-19) NSP16 in COVID-19 Patient Lung
Immunohistochemical analysis of paraffin-embedded COVID-19 patient lung tissue using anti- SARS-CoV-2 (COVID-19) NSP16 antibody (ASC12216, 0.5 µg/mL). Tissue was fixed with formaldehyde and blocked with 10% 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 NSP16 protein was observed in macrophage of COVID-19 patient lung, but not in non-COVID-19 patient lung.

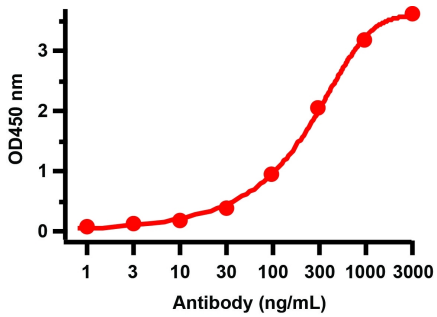
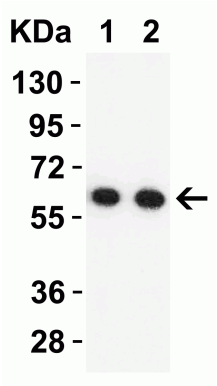


Figure 2 ELISA Validation with SARS-CoV-2 (COVID-19) NSP16 Protein
Antibodies: SARS-CoV-2 (COVID-19) NSP16 Antibody, ASC12216. A direct ELISA was performed using SARS-CoV-2 NSP16 recombinant protein (10-418) as coating antigen and the anti-SARS-CoV-2 (COVID-19) NSP16 antibody as the capture antibody. 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) NSP16 Protein



Loading: 30 ng per lane of SARS-CoV-2 (COVID-19) NSP16 recombinant protein (10-418). Antibodies: SARS-CoV-2 (COVID-19) NSP16, ASC12216, 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'.