

**Mouse Anti-SARS-CoV-2 (COVID-19) Nucleocapsid Protein/SARS-CoV-2 NP [MD310]: MC0607**

**Intended Use:** For Research Use Only

**Description:** SARS-CoV-2 is slightly different from SARS CoV and MERS CoV, but the functionally important ORFs, ORF1a and ORF1b, and major structural proteins such as the spike (S), membrane (M), envelop (E) and nucleocapsid (N) proteins are well annotated. Four structural proteins are essential for virion assembly and infection of CoVs. Homotrimers of S proteins make up the spike on the surface of virus particles and it is the sole viral membrane protein responsible for cell entry. It binds to the receptor on the target cell and mediates subsequent virus-cell fusion. It is also the key target for vaccine design. The M protein has three transmembrane domains and shapes the virions, promotes membrane curvature, and binds to the nucleocapsid. The E protein plays a role in virus assembly and release, and it is required for pathogenesis. The N protein contains two domains, both of them can bind virus RNA genome via different mechanisms. It is reported that N protein is an antagonist of interferon and viral encoded repressor (VSR) of RNA interference (RNAi), which benefit the viral replication. The S-protein mediates receptor binding and membrane fusion. S-protein contains two subunits, S1 and S2. S1 contains a receptor binding domain (RBD), which is responsible for recognizing and binding with the cell surface receptor. S2 subunit is the "stem" of the structure, which contains other basic elements needed for the membrane fusion. The S-protein is the common target for neutralizing antibodies and vaccines. It's been reported that SARS-CoV-2 infect the human respiratory epithelial cells through interaction with the human ACE2 receptor. The N-protein is the most abundant protein in coronavirus. The N-protein is a highly immunogenic phosphoprotein, and it is normally very conserved. The N protein of coronavirus is often used as a marker in diagnostic assays.

**Specifications:**

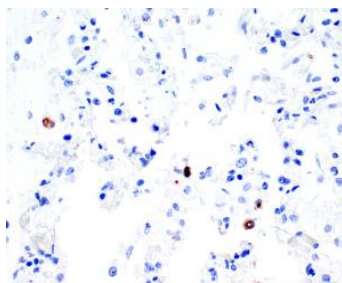
Clone: MD310  
 Source: Mouse  
 Isotype: IgG2a  
 Reactivity: SARS-CoV-2  
 Immunogen: Synthetic peptide corresponding to residues surrounding Gly30 of SARS-CoV-2 NP  
 Localization: Cytoplasm and the nucleus, a subnuclear structure  
 Formulation: Antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN3)  
 Storage: Store at 2°- 8°C  
 Applications: IHC, ICC/IF, WB  
 Package:

Description	Catalog No.	Size
SARS-CoV-2 Nucleocapsid Protein/SARS-CoV-2 NP	MC0607	1 ml

**IHC Procedure**

Positive Control Tissue: Human lung tissue  
 Concentrated Dilution: 20-200  
 Pretreatment: Tris EDTA pH9.0, pressure cooker for 15 min or water bath at 95°-99°C for 30-60 min  
 Incubation Time and Temp: 30 minutes @ 37°C  
 Detection: Refer to the detection system manual

\* Result should be confirmed by an established diagnostic procedure.



FFPE SARS-CoV-2 positive human lung stained with anti-SARS-CoV-2 NP using DAB

**References:**

- Respiratory viral infection in lung-transplant induces exosomes that trigger chronic-rejection. Gunasekaran M, et al. The Journal of Heart and Lung Transplantation Jan 21 2020.
- Nucleocapsid Protein Recruitment to Replication-Transcription Complexes Plays a Crucial Role in Coronaviral Life Cycle. Fulvio Reggiori, et al. J Virol Jan 31;94(4):e01925-19, 2020. doi: 10.1128/JVI.01925-19.