

PRODUCT INFORMATION



SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08)

Item No. 31984

Overview and Properties

Contents: This vial contains 50 or 100 µl of protein A-affinity purified monoclonal antibody.

Synonyms: 2019-nCoV NP, 2019-nCoV Nucleocapsid Protein, 2019-nCoV Nucleoprotein, COVID-19 NP, COVID-19 Nucleocapsid Protein, COVID-19 Nucleoprotein, SARS-CoV-2 NP, SARS-CoV-2 Nucleoprotein, Severe Acute Respiratory Syndrome Coronavirus 2 Nucleocapsid Protein

Immunogen: Recombinant SARS-CoV nucleocapsid protein

Cross Reactivity: See page 2

Species Reactivity: See page 2

Form: Liquid

Storage: -80°C (as supplied)

Stability: ≥1 year

Storage Buffer: 0.2 µm filtered solution in PBS

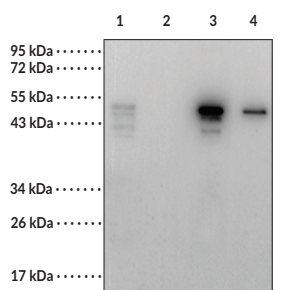
Clone: 08

Host: Mouse

Isotype: IgG1

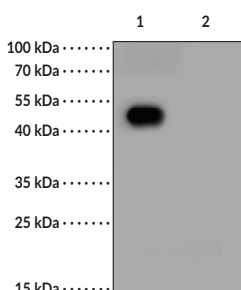
Applications: ELISA, Flow cytometry (FC), Immunohistochemistry-paraffin (IHC-P), Western blot (WB); the recommended starting dilution is 1:5,000-1:10,000 for ELISA, 1:25-1:100 for FC, 1:100-1:500 for IHC-P, and 1:1,000-1:10,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



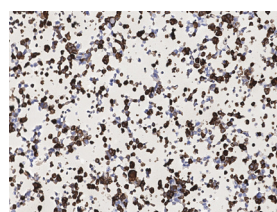
Lane 1: SARS-CoV Nucleocapsid Protein (30 ng)
Lane 2: SARS-CoV Nucleocapsid Protein (5 ng)
Lane 3: SARS-CoV-2 Nucleocapsid Protein (30 ng)
Lane 4: SARS-CoV-2 Nucleocapsid Protein (5 ng)

WB using SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08) at a 1:1,000 dilution. A secondary anti-mouse IgG H&L HRP was used at 1:10,000 dilution. Performed under reducing conditions.

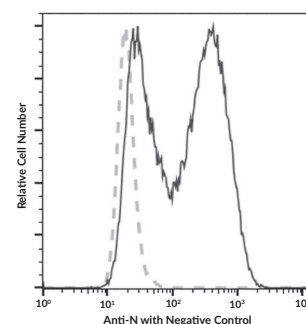


Lane 1: SARS-CoV-2 nucleocapsid protein-overexpressed HEK293 whole cell lysate (10 µg)
Lane 2: HEK293 whole cell lysate (10 µg)

WB using SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08) at a 1:5,000 dilution. A secondary anti-mouse IgG H&L HRP was used at 1:10,000 dilution. Performed under reducing conditions.



Immunofluorescent labeling of nucleocapsid protein-overexpressing HEK293 cells labeled with SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08) followed by a HRP-conjugated secondary antibody.



Flow cytometric analysis of SARS-CoV-2 nucleocapsid protein-overexpressing HEK293 cells. Cells were labeled with purified SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08) followed by a FITC-conjugated secondary antibody. The fluorescence histogram was derived from gated events with the forward and side light-scatter characteristics of intact cells.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Reactivity

Cross Reactivity: (+) Nucleocapsid protein,
SARS-CoV-2 Delta (B.1.617) nucleocapsid protein (D377Y),
SARS-CoV-2 Delta (B.1.617) nucleocapsid protein (R230M, D377Y),
SARS-CoV-2 Delta (B.1.617.3) nucleocapsid protein (P67S, R203M, D377Y),
SARS-CoV-2 Alpha (B.1.1.7) nucleocapsid protein (R203K, G204R),
SARS-CoV-2 Alpha (B.1.1.7) nucleocapsid protein (I292T),
SARS-CoV-2 Alpha (B.1.1.7) nucleocapsid protein (D3L, R203K, G204R, S235F),
SARS-CoV-2 Alpha (B.1.1.7) nucleocapsid protein (D3L, S235F),
SARS-CoV-2 Alpha (B.1.1.7/B.1.237) nucleocapsid protein (S194L),
SARS-CoV-2 Alpha/Beta (B.1.1.7/B.1.351/A.2.2) nucleocapsid protein (P13L),
SARS-CoV-2 Beta (B.1.351/B.1.351.2/B.1.351.3/B.1.427/B.1.429) nucleocapsid protein (T205I),
SARS-CoV-2 Gamma (P.1/P.1.1/P.1.2) nucleocapsid protein (P80R),
SARS-CoV-2 Eta (B.1.525) nucleocapsid protein (A12G, T205I)

Species Reactivity: (+) SARS-CoV,
SARS-CoV-2,
SARS-CoV-2 Delta (B.1.617),
SARS-CoV-2 Delta (B.1.617.2),
SARS-CoV-2 Omicron (B.1.1.529),
SARS-CoV-2 Omicron (BA.2),
SARS-CoV-2 Omicron XE (BA.1 x BA.2),
SARS-CoV-2 Omicron (BA.4)

(-) MERS-CoV,
HCoV-229E,
HCoV-NL63,
HCoV-HKU1 (isolate N5),
HCoV-OC43

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Description

Severe acute respiratory syndrome coronavirus (SARS-CoV) and SARS-CoV-2 nucleocapsid proteins are encoded by the N gene in SARS-CoV and SARS-CoV-2 RNA.^{1,2} SARS-CoV and SARS-CoV-2 are members of the *Betacoronavirus* genus of viruses that have approximately 79% sequence identity and share 27 T cell epitopes in common.³⁻⁵ The SARS-CoV-2 nucleocapsid protein has greater than 90% similarity to the SARS-CoV nucleocapsid protein and contains two unique B cell epitopes and two T cell epitopes that are structurally stable, non-allergenic, and induce production of IFN- γ .^{2,5} SARS-CoV and SARS-CoV-2 nucleocapsid proteins package the viral RNA into a helical ribonucleoprotein complex (RNP), which is a template for viral replication, and are integral for viral self-assembly and involved in regulation of the host cell cycle.^{2,6} SARS-CoV and SARS-CoV-2 are the causative agents of SARS and COVID-19, respectively, both of which are primarily respiratory illnesses characterized by fever, cough, and shortness of breath that can lead to life-threatening complications.^{4,7,8} Cayman's SARS-CoV/SARS-CoV-2 Nucleocapsid Protein Monoclonal Antibody (Clone 08) can be used for ELISA, flow cytometry (FC), immunohistochemistry-paraffin (IHC-P), and Western blot (WB) applications. The antibody recognizes wild-type and various mutant nucleocapsid proteins at 45.6 kDa from SARS-CoV, SARS-CoV-2, and several SARS-CoV-2 Alpha, Beta, Gamma, Delta, Eta, and Omicron subvariants.

References

1. Kandeel, M., Ibrahim, A., Fayez, M., *et al.* From SARS and MERS CoVs to SARS-CoV-2: Moving toward more biased codon usage in viral structural and nonstructural genes. *J. Med. Virol.* **92**(6), 660-666 (2020).
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5. Ahmed, S.F., Quadeer, A.A., and McKay, M.R. Preliminary identification of potential vaccine targets for the COVID-19 coronavirus (SARS-CoV-2) based on SARS-CoV immunological studies. *Viruses* **12**(3), E254 (2020).
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