abcam

Product datasheet

Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein ab271180

Recombinant RabMAb

4 Abreviews 2 References 15 Images

Overview

Product name	Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein
Host species	Rabbit
Tested applications	**Suitable for:** ELISA, IP, IHC-P, Flow Cyt (Intra), WB, ICC/IF
Species reactivity	**Reacts with:** SARS-CoV-2
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HEK-293T transfected with myc-His-tagÂ® SARS-CoV-2 Nucleocapsid protein; SARS-CoV-2 Nucleocapsid Recombinant Protein; SARS-CoV-2 infected Vero; **ab273530**; **ab272107** IHC-P: HEK-293T transfected with myc-His-tagÂ® SARS-CoV-2. ICC/IF: 293T transfected with myc-His-tagÂ® SARS-CoV-2; Vero cells after infecting with SARS-CoV-2 virus for 48 h. Flow Cyt (intra): HEK-293T transfected with myc-His-tagÂ® SARS-CoV-2. IP: HEK-293T transfected with myc-His-tagÂ® SARS-CoV-2.
General notes	*This antibody is developed with the collaboration of Dr. Hangping Yao, State Key Laboratory for Diagnosis and Treatment of Infectious Diseases in Zhejiang University, School of Medicine.* This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide

	Constituents: 59.94% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR24334-118
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab271180 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

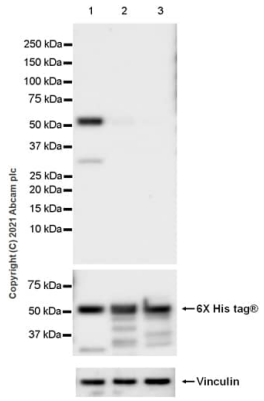
Application	Abreviews	Notes
ELISA		Use at an assay dependent concentration. Use at 31.25 ng /ml
IP		1/30.
IHC-P		1/4000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Flow Cyt (Intra)		1/500.
WB	★★★★★ (2)	1/1000.
ICC/IF	★★★★★ (1)	1/1000.

Target

Relevance

Nucleocapsid protein is a most abundant protein of coronavirus on the helical nucleocapsid of coronaviruses. N protein of SARS CoV-2 **ab273530** is a structural protein required for RNA synthesis, and has RNA chaperone activity that may be involved in template switch. N protein enters the host cell with the viral RNA to facilitate its replication and process the virus particle assembly and release. N protein is a highly immunogenic phosphoprotein also implicated in modulating cell signalling pathways. Coronavirus nucleocapsid proteins localize to the cytoplasm and the nucleolus, a subnuclear structure, in both virus-infected primary cells and in cells transfected with plasmids that express N protein.

Images



Western blot - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

All lanes : Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180) at 1/1000 dilution

Lane 1 : HEK-293T (human embryonic kidney) transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag®, whole cell lysate
Lane 2 : HEK-293T (human embryonic kidney) transfected with SARS-CoV-1 Nucleocapsid protein expression vector containing a myc-His-tag®, whole cell lysate
Lane 3 : HEK-293T (human embryonic kidney) transfected with MERS Nucleocapsid protein expression vector containing a myc-His-tag®, whole cell lysate

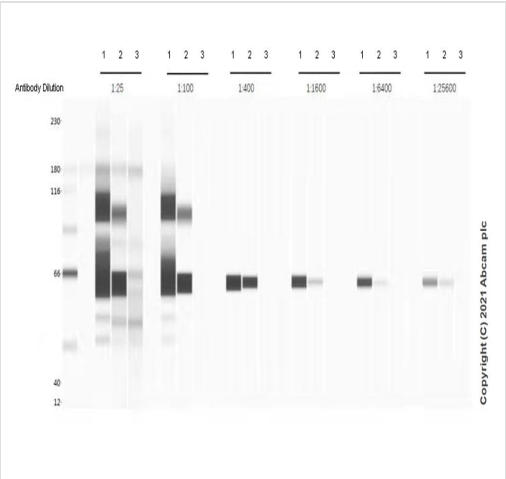
Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

Observed band size: 51 kDa

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time 7.75 seconds



Western blot - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

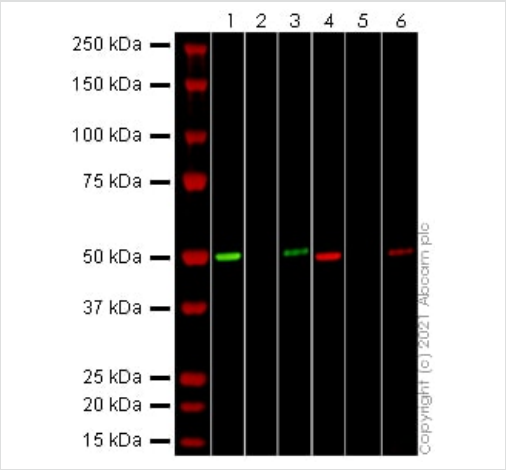
All lanes : Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180) at 1/1000 dilution

Lane 1 : SARS-CoV-2 Nucleocapsid Recombinant Protein at 0.1 µg
Lane 2 : SARS-CoV-2 infected Vero for 48 hours
Lane 3 : Uninfected Vero

Observed band size: 51 kDa

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Data was kindly provided by Dr. Hangping Yao, State Key Laboratory for Diagnosis and Treatment of Infectious Diseases in Zhejiang University, School of Medicine.



Western blot - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

All lanes : Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180) at 1/1000 dilution

Lanes 1 & 4 : Recombinant Human coronavirus SARS-CoV-2 nucleocapsid protein (His tag) (**ab273530**)
Lanes 2 & 5 : Recombinant Human coronavirus SARS Nucleocapsid Protein (**ab270829**)
Lanes 3 & 6 : Recombinant Human coronavirus SARS-CoV-2 Nucleocapsid Protein (His tag) (**ab272107**)

Lysates/proteins at 0.1 µg per lane.

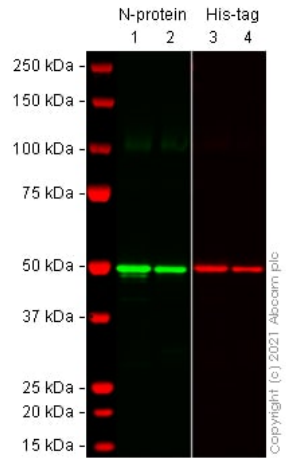
Performed under reducing conditions.

Observed band size: 51 kDa

Lanes 1 - 3: Green - ab271180 observed at 51 kDa. **Lanes 4 - 6:** Red - loading control **ab18184** (Mouse monoclonal [HIS.H8] to 6X His tag®) observed at 51 kDa.

ab271180 was shown to react with SARS-CoV-2 nucleocapsid protein in Western blot. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab271180 and **ab18184** (Mouse monoclonal [HIS.H8] to 6X His tag®) overnight at 4 °C at a 1 in 1000 dilution of both antibodies. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed

(**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.



Western blot - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Samples

Lanes 1 & 3: Recombinant Human coronavirus SARS-CoV-2 Nucleocapsid Protein (His tag) (**ab273530**) (0.2 µg)

Lanes 2 & 4: Recombinant Human coronavirus SARS-CoV-2 Nucleocapsid Protein (His tag) (**ab272107**) (0.2 µg)

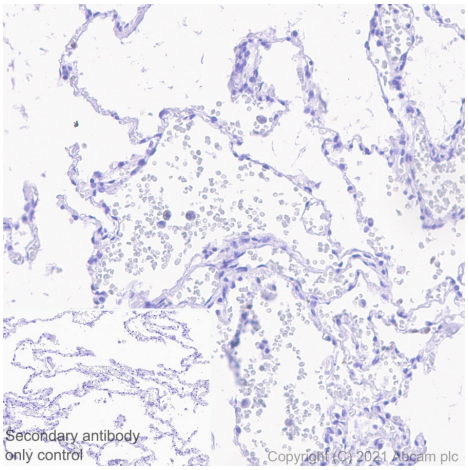
Green: Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180)

Red: Mouse monoclonal [HIS.H8] to 6X His tag® (**ab18184**)

Lanes 1 & 2: Green - ab271180 observed at 50 kDa.

Lanes 3 & 4: Red - loading control Mouse anti-6x HisTag observed at 50 kDa.

ab271180 was shown to react with SARS-CoV-2 nucleocapsid protein in Western blot. Membranes were blocked in 3% milk before incubation with ab271180 and Mouse anti-6x HisTag (**ab18184**) overnight at 4 °C at a 1/1000 dilution. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1/20000 dilution for 1 h at room temperature before imaging.

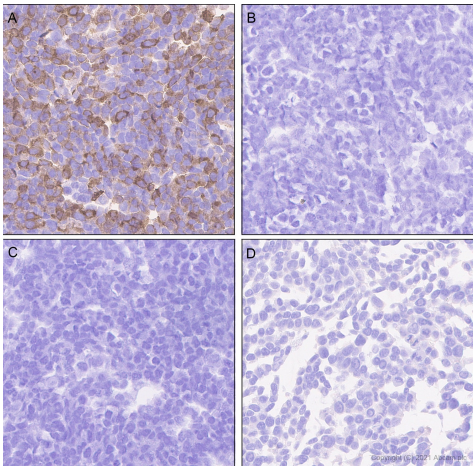


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Immunohistochemical analysis of paraffin-embedded Human lung labeling SARS-CoV-2 with ab271180 at 1/4000 dilution followed by ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). **Negative control**: No staining on human lung. The section was incubated with ab271180 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Goat Anti-Rabbit IgG H&L (HRP polymer).

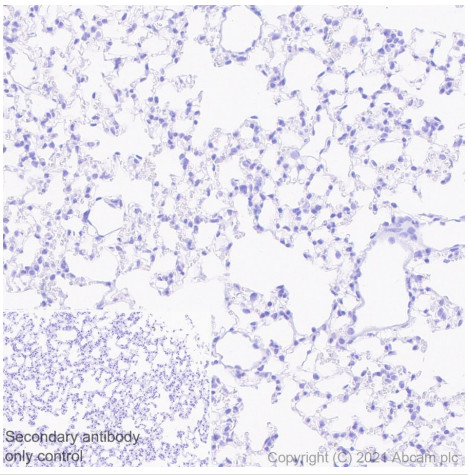
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Immunohistochemical analysis of paraffin-embedded HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag® (Panel A) HEK-293T transfected with SARS-CoV-1 Nucleocapsid protein expression vector containing a myc-His-tag® (Panel B) HEK-293T transfected with MERS Nucleocapsid protein expression vector containing a myc-His-tag® (Panel C) HEK-293T transfected with control vector containing a myc-His-tag® (Panel D) with 271180 at 1/4000 dilution followed by ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Positive staining on (A) HEK-293T transfected with a SARS-CoV-2 Nucleocapsid protein expression vector is observed. No staining on (B) HEK-293T transfected with a SARS-CoV-1 Nucleocapsid protein expression vector, (C) HEK-293T transfected with MERS Nucleocapsid protein expression vector and (D) HEK-293T transfected with empty vector. The section was incubated with ab271180 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

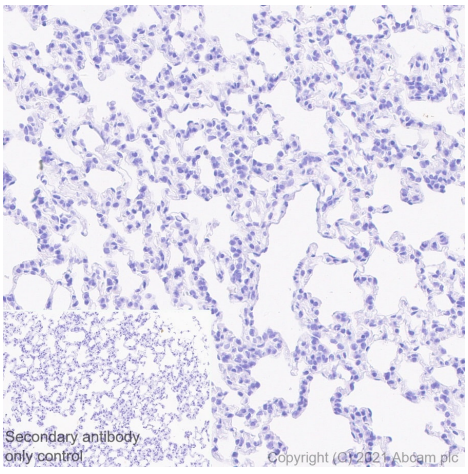


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Immunohistochemical analysis of paraffin-embedded Mouse lung labeling SARS-CoV-2 with ab271180 at 1/4000 dilution followed by ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). **Negative control**: No staining on Mouse lung. The section was incubated with ab271180 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Goat Anti-Rabbit IgG H&L (HRP polymer).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

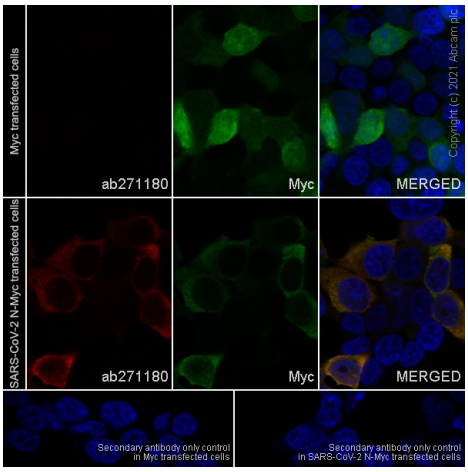


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Immunohistochemical analysis of paraffin-embedded Rat lung labeling SARS-CoV-2 with ab271180 at 1/4000 dilution followed by ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). **Negative control**: No staining on Rat lung. The section was incubated with ab271180 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

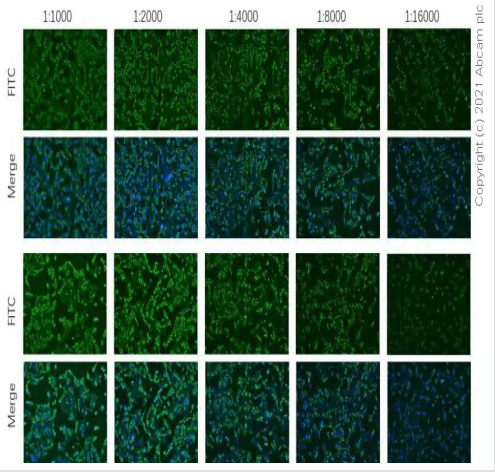
Secondary antibody only control: Goat Anti-Rabbit IgG H&L (HRP polymer).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunocytochemistry/ Immunofluorescence - Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180)

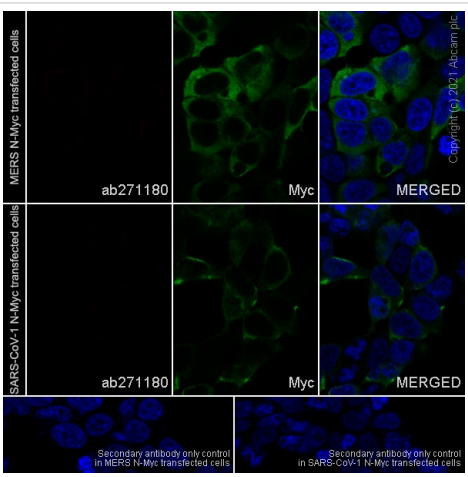
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100-permeabilized 293T cells transfected with myc-tagged SARS-CoV-2 Nucleocapsid protein expression vector labelling SARS-CoV-2 with ab271180 at 1/1000 dilution, followed by **ab150080** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) antibody at 1/1000 dilution (Red). **ab202008** Anti-Myc tag mouse monoclonal antibody (Alexa Fluor® 488) was used to counterstain Myc tag at 1/200 dilution (Green). The nuclear counterstain was DAPI (Blue). Confocal image showing cytoplasmic staining in 293T cells transfected with myc-tagged SARS-CoV-2 Nucleocapsid protein expression vector.



Immunocytochemistry/ Immunofluorescence - Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180)

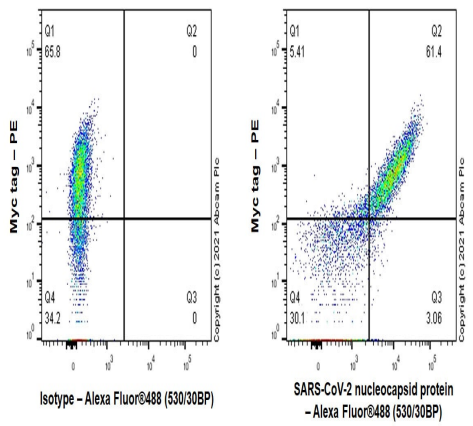
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100-permeabilized Vero cells labelling SARS-CoV-2 with ab271180 at 1/1000 dilution, followed by **ab150077** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/500 dilution. Fluorescent image showing positve staining in Vero cells after infecting with SARS-CoV-2 virus for 48 h. Nuclear counter stain DAPI.
Two indenpendent optical fields were captured for imaging at each given antibody dilution.

This piece of data was kindly provided by Dr. Hangping Yao, State Key Laboratory for Diagnosis and Treatment of Infectious Diseases in Zhejiang University, School of Medicine



Immunocytochemistry/ Immunofluorescence - Rabbit monoclonal [EPR24334-118] to SARS-CoV-2 nucleocapsid protein (ab271180)

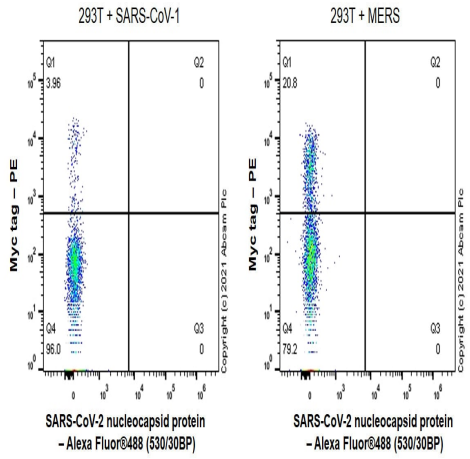
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100-permeabilized 293T cells transfected with myc-tagged SARS-CoV-1 and MERS Nucleocapsid protein labelling SARS-CoV-2 with ab271180 at 1/1000 dilution, followed by **ab150080** Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) antibody at 1/1000 dilution. **ab202008** Anti-Myc tag mouse monoclonal antibody (Alexa Fluor® 488) was used to counterstain Myc tag at 1/200 dilution (Green). The nuclear counterstain was DAPI (Blue). Confocal image showing no staining in 293T cells transfected with myc-tagged SARS-CoV-1 and MERS Nucleocapsid protein, which are **negative controls** for SARS-CoV-2.



Flow Cytometry (Intracellular) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HEK-293T (human embryonic kidney) transfected with myc-tagged SARS-CoV-2 Nucleocapsid protein expression construct labelling SARS-CoV-2 with ab271180 at 1/500 dilution (Right) compared with a Rabbit monoclonal IgG (**ab172730**) (Left) isotype control.

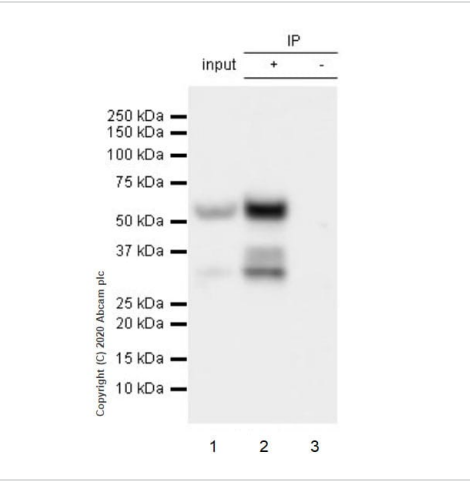
A Goat anti rabbit IgG (Alexa Fluor® 488, **ab150077** at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HEK-293T (human embryonic kidney) transfected with myc-tagged SARS-CoV-1 Nucleocapsid protein expression construct (Left)/ HEK-293T (human embryonic kidney) transfected with myc-tagged MERS Nucleocapsid protein expression construct (Right).

A Goat anti rabbit IgG (Alexa Fluor® 488, **ab150077** at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

SARS-CoV-2 was immunoprecipitated from 0.35 mg HEK-293T (human embryonic kidney) transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag®, whole cell lysate 5 µg with ab271180 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab271180 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(**ab131366**) was used at 1/5000 dilution.

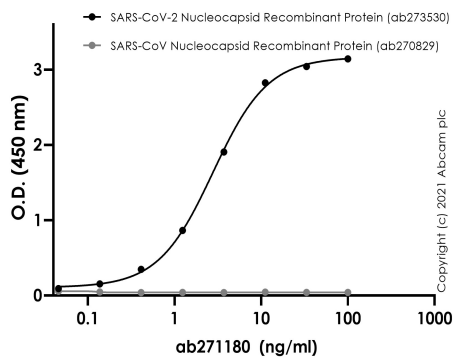
Lane 1: HEK-293T (human embryonic kidney) transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag® whole cell lysate 5 µg

Lane 2: ab271180 IP in HEK-293T transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag® whole cell lysate.

Lane 3: Rabbit monoclonal IgG (**ab172730**) instead of ab271180 in HEK-293T transfected with SARS-CoV-2 Nucleocapsid protein expression vector containing a myc-His-tag® whole cell lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3.25 seconds.



ELISA - Anti-SARS-CoV-2 nucleocapsid protein antibody [EPR24334-118] (ab271180)

Plates were coated with Recombinant Human coronavirus SARS-CoV-2 nucleocapsid protein (His tag, **ab273530**) and Recombinant Human coronavirus SARS Nucleocapsid Protein (**ab270829**) at 500 ng/ml.

Primary antibody (ab271180) concentration range 0.045-100 ng /ml.

Pre-adsorbed secondary antibody, goat anti-rabbit IgG H&L (HRP, **ab97080**) used at 1/2000 dilution.

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