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Datasheet for 600-401-MS4

SARS-CoV-2 Nucleocapsid (N) Protein Antibody

Overview

Description:	Anti-SARS-CoV-2 Nucleocapsid (N) Protein (RABBIT) Antibody - 600-401-MS4
Item No.:	600-401-MS4
Size:	100 µg
Applications:	ELISA, IF, WB
Reactivity:	SARS-CoV-2
Host Species:	Rabbit

Product Details

Background:	SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2 or COVID-19) is related to SARS-CoV, MERS, and four milder coronaviruses (HKU1, NL63, OC43 and 229E). SARS-CoV-2 is an enveloped positive-strand RNA virus that consists of four structural proteins: spike (S) protein, envelope (E) protein, membrane (M) protein and nucleocapsid (N) protein. The spike protein is the most important surface protein of coronavirus. SARS-CoV-2 has a high affinity binding to human receptor ACE2 (angiotensin-converting enzyme 2) within respiratory epithelial. ACE2 is a membrane-bound aminopeptidase that has a vital role in the cardiovascular and immune systems. The nucleocapsid protein is a most abundant protein of coronavirus. The coronavirus nucleocapsid protein is the major structural component of virions that associates with genomic RNA to form a long, flexible, helical nucleocapsid. Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody is useful for researchers interested in diagnostics and viral research.
Synonyms:	rabbit anti-SARS CoV 2 Nucleocapsid Protein Antibody, N-protein antibody, SARS CoV2 antibody, 2019-nCoV, COVID-19, Severe acute respiratory syndrome antibody, Severe acute respiratory syndrome coronavirus 2
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Reactivity:	SARS-CoV-2
Immunogen Type:	Recombinant Protein

Immunogen:	Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody was produced by repeated immunizations with purified recombinant SARS-CoV-2 Nucleocapsid protein with C-terminal His-tag, derived from the transfected human HEK293 cells.
Purity/Specificity:	This affinity purified antibody is directed against SARS Coronavirus 2 Nucleocapsid (N) protein. The product was purified from monospecific antiserum by immunoaffinity chromatography over SARS CoV-2 resin. Detects the Nucleocapsid (N), Omicron, and BA.2 sub-variant. BLAST analysis was used to suggest reactivity with related Coronavirus proteins. Cross reactivity with homologues from other sources has not been determined.
Relevant Links:	• NCBI - QHD43423 • NCBI - MN908947.3 • GeneID - 43740575 • UniProtKB - P0DTC9

Application Details

Tested Applications:	ELISA
Suggested Applications:	IF, WB (Based on references)
Application Note:	Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody has been tested for use in ELISA and Bio-Layer Interferometry (BLI), and is suitable in Western Blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 47 kDa in size corresponding to SARS-CoV-2 Nucleocapsid (N) protein by western blotting in the appropriate cell lysate or extract.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:500,000-1:600,000
WB:	User Optimized

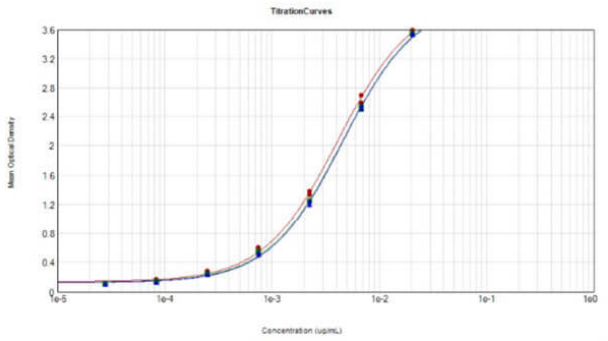
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

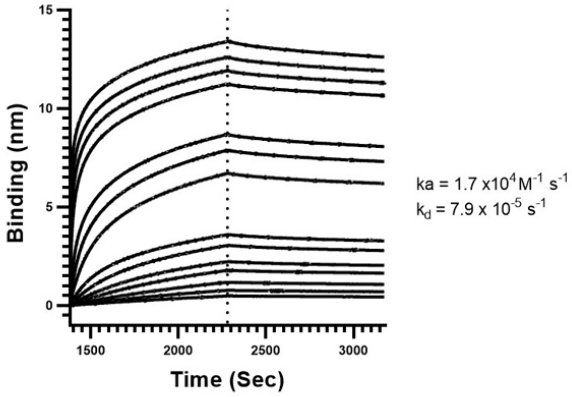
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

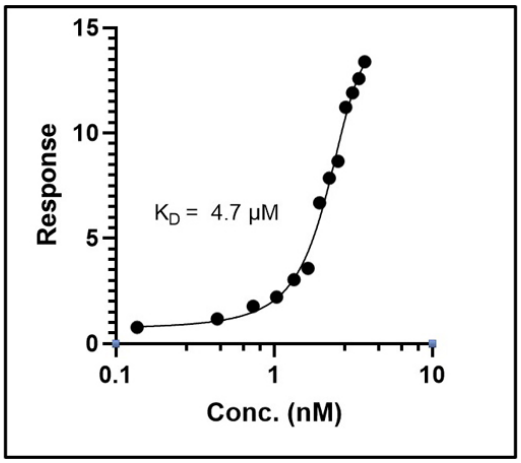
Images



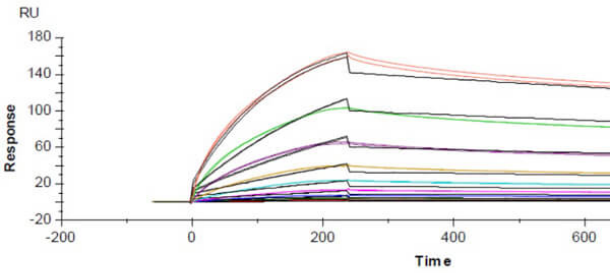
ELISA
ELISA results of Rabbit Anti-SARS CoV-2 Nucleocapsid (N) Protein Variants. Each well was coated in duplicate with 0.5 µg/mL of SARS CoV-2 Canonical Nc [Red Line], SARS CoV-2 Omicron Nc [Green Line], SARS CoV-2 Omicron BA.2 Nc [Blue Line]. The starting dilution of antibody was 0.55 µg/mL and the X-axis represents the Log10 of a 3-fold dilution. This titration is a 4-parameter curve fit where the IC50 is defined as the titer of the antibody. SARS CoV-2 Nc IC50: 4 ng/mL, SARS CoV-2 Omicron Nc IC50: 5 ng/mL, SARS CoV-2 BA.2 Nc IC50: 5 ng/mL. Assay performed using Goat Anti-Rabbit IgG HRP conjugated (p/n 611-1302) and TMB substrate (p/n TMBE-1000).



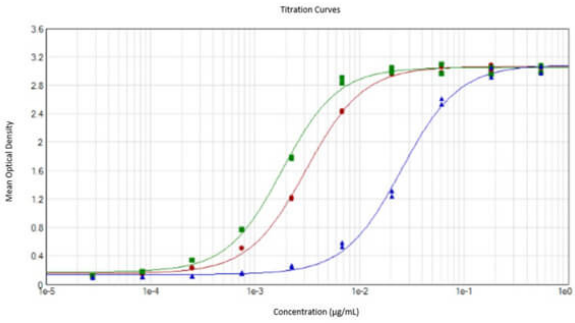
ELISA
Binding mode and kinetic analysis of Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody (p/n 600-401-MS4). Using Octet R4, SARS COV-2N was immobilized at 20 µg/mL on an AR2G biosensor and exposed to Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody over a range of 0.7 nM – 5.6 µM. Each curve represents the acquired signal of its protein concentration. The interaction fits to a bivalent binding site kinetic model. The association constant (ka=1.7 x 10^4 M^-1 s^-1 and dissociation constant (kd=7.9 x 10^-5 s^-1) values are depicted in the graph. The assay was performed as per the manufacturer's protocol.



ELISA
Fitting of Kinetic Data to bivalent binding site model. Steady state signals are fitted to a bivalent binding site model. A 4-parameter non-linear regression curve was used for the integration of the data. The Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody (p/n 600-401-MS4) presents a KD= 4.7 µM (affinity constant) to SARS-CoV-2 Nucleocapsid (N) Protein.



Surface Plasmon Resonance (SPR)
Surface Plasmon Resonance (SPR) Data of Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Antibody. SARS-CoV-2 Nucleocapsid protein was immobilized on a carboxymethyldextran sensor chip. Ten (10) dilutions of Anti-SARS-CoV-2 Nucleocapsid (N) Antibody (colors) were flowed across the chip at 30 µL/min with 240 s contact time and then 720 s dissociation time. Fitted line (black) constants are: kon = 2.2 x 104 M-1 s-1 and koff = 3.3 x 10-4 s-1. The Equilibrium Dissociation constant (KD) of the antibody on several assays was 15 nM. (Average primary antibody KD = 1 µM).



ELISA
ELISA results of Rabbit Anti-SARS CoV-2 Nucleocapsid (N) Protein. Each well was coated in duplicate with 0.5 µg of SARS CoV-1 (N) Protein [Red Line], SARS CoV-2 (N) Protein [Green Line], MERS N [Blue Line]. The starting dilution of antibody was 0.5µg/ml and the X-axis represents the Log10 of a 3-fold dilution. This titration is a 4-parameter curve fit where the IC50 is defined as the titer of the antibody. SARS CoV-1 N IC50: 3ng/mL, SARS CoV-2 N IC50: 2ng/mL, MERS N IC50: 25mg/mL. Assay performed using Goat Anti-Rabbit IgG HRP conjugated (p/n 611-1302) and TMB substrate (p/n TMBE-1000).

References

- Lacasse E et al. Delayed viral clearance and altered inflammatory responses affect severity of SARS-CoV-2 infection in aged mice. *Immun Ageing.* (2025)
- Allaeys I et al. SARS-CoV-2 infection modifies the transcriptome of the megakaryocytes in the bone marrow. *Blood Adv.* (2024)
- Lacasse E et al. SARS-CoV-2 Nsp2 Contributes to Inflammation by Activating NF-κB. *Viruses.* (2023)
- Wang Y et al. Enhancing the Stability of COVID-19 Serological Assay through Metal-Organic Framework Encapsulation. *Adv Healthc Mater.* (2021)

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