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Datasheet for 200-401-MS4-0100

SARS-CoV-2 Nucleocapsid (N) Protein Antibody

Overview

Description:	Anti-SARS-CoV-2 Nucleocapsid (N) Protein (RABBIT) Antibody - 200-401-MS4-0100
Item No.:	200-401-MS4-0100
Size:	100 µg
Applications:	ELISA, 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

Gene Name:	N
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 protein A purified antibody is directed against SARS Coronavirus 2 Nucleocapsid (N) protein. The product was purified from monospecific antiserum by protein A affinity purification. 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, WB
Application Note:	Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody has been tested for use in ELISA, Bio-Layer Interferometry (BLI), and 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:	User Optimized
WB:	1:1000-1:2000

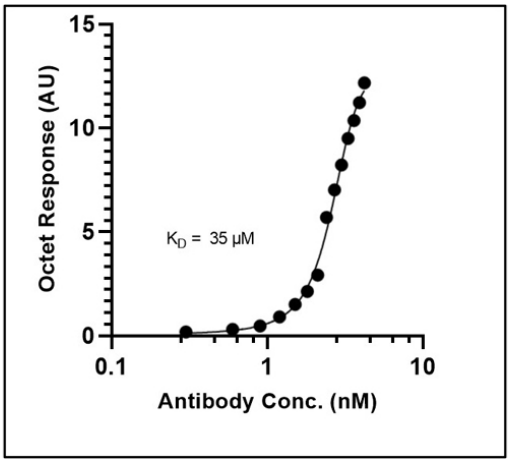
Formulation

Physical State:	Lyophilized
Concentration:	5.0 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
Reconstitution Volume:	100 µL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

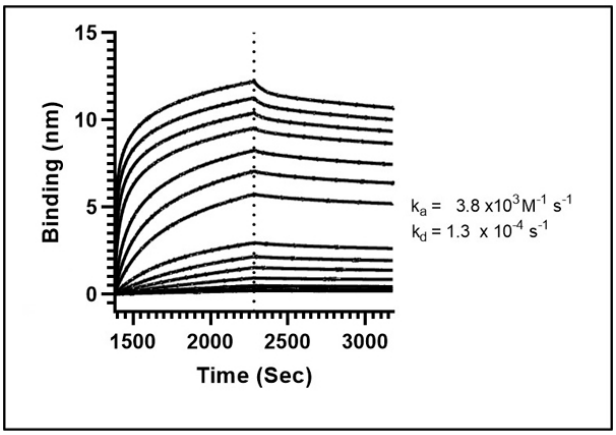
Shipping & Handling

Shipping Condition:	Ambient
Storage Condition:	Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. 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.

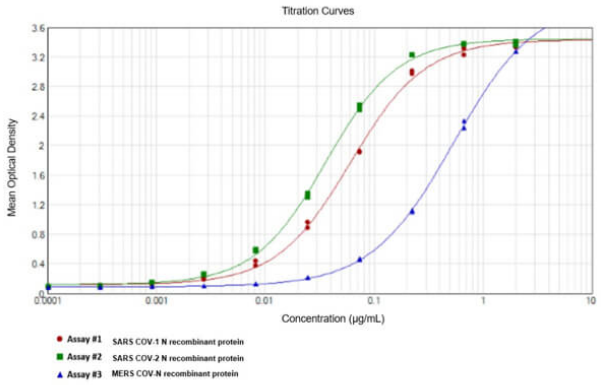
Images



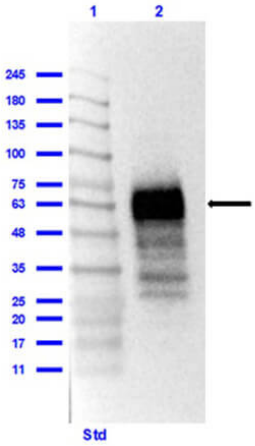
ELISA
Fitting of Kinetic Data to bivalent binding site model. Steady state signals are fitted to a bivalent binding site model. A 4-parameter non-linear regression curve was used for the integration of the data. The Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody (p/n 200-401-MS4) presents a KD=35 µM (affinity constant) to Anti-SARS-CoV-2 Nucleocapsid (N) Protein.



ELISA
Binding mode and kinetic analysis of Rabbit Anti-SARS-CoV-2 Nucleocapsid (N) Protein Antibody (p/n 200-401-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 2.0 nM – 16.7 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=3.8x10^3 M^-1 s^-1) and dissociation constant (kd=1.3x10^-4 s^-1) values are depicted in the graph. The assay was performed as per the manufacturer's protocol.



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 [Red Line], SARS CoV-2 N [Green Line], MERS N [Blue Line]. The starting dilution of antibody was 2µg/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: 61ng/mL, SARS CoV-2 N IC50: 36ng/mL. Assay performed using Goat Anti-Rabbit IgG HRP conjugated (p/n 611-1302) and TMB substrate (p/n TMBE-1000).



Western Blot
Western Blot Results of Rabbit Anti-SARS CoV-2 Nucleocapsid (N) Protein Antibody. Lane 1: Opal Prestained Molecular Weight (p/n MB-210-0500). Lane 2: SARS CoV-2 N protein (10ng). Primary Antibody: Anti-SARS CoV-2 N Protein at 1µg/mL overnight for 2 days at 2-8°C. Secondary Antibody: Goat Anti-Rabbit IgG HRP conjugated Antibody (p/n 611-1302) at 1:40,000 for 30 mins at RT. Block: BlockOut Buffer (p/n MB-073) for 1hr at RT. Predicted MW: ~47kDa; ~55kDa for glycosylated CoV-2-His-tag. Observed MW: ~63kDa. Other bands are due to overload of protein. Exposure: 1 sec.

References

- Hasanpourghadi, M et al. T cell responses to adenoviral vectors expressing the SARS-CoV-2 nucleoprotein. *Current Trends in Microbiology* (2021)

Disclaimer

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