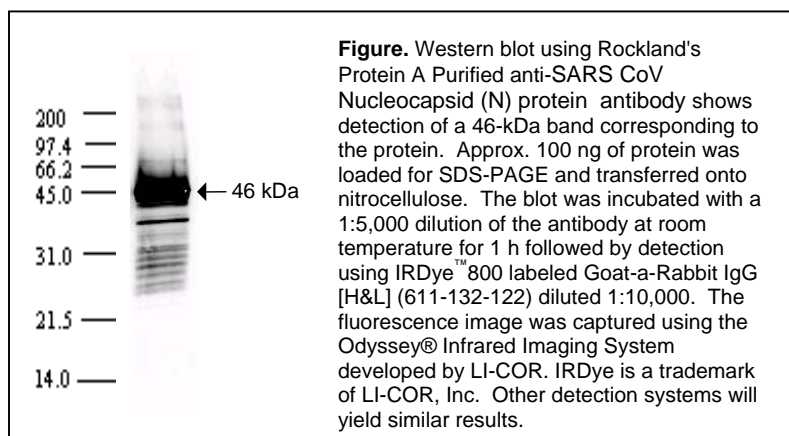


**Certificate of Analysis****Product:** Protein A Purified Anti-SARS-CoV Nucleocapsid (N) Protein (Rabbit)**Code:** 200-401-A50**Lot #:** 16570**Size:** 500 µg**Physical State:** Lyophilized**Antibody Concentration:** 5.0 mg/ml (by UV absorbance at 280 nm)**Buffer:** 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**Stabilizer:** None**Preservative:** 0.01% (w/v) Sodium Azide

**Storage Conditions:** Store vial at 4° C prior to restoration. Reconstitute in 0.1 ml of deionized water or equivalent. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.

**Background Information:** The coronavirus nucleocapsid protein is the major structural component of virions that associates with genomic RNA to form a long, flexible, helical nucleocapsid. Sequence comparison of the N genes of five strains of the coronavirus mouse hepatitis virus suggests a three-domain structure for the nucleocapsid protein. The nucleocapsid protein may be associated with cellular membranes where it participates in viral RNA synthesis and virus budding.



**Application Note(s):** This protein A purified antibody has been tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 46 kDa in size corresponding to SARS Nucleocapsid (N) protein by western blotting in the appropriate cell lysate or extract.

<b>Recommended Dilutions:</b>	<b>ELISA</b>	1:10,000 - 1:50,000
	<b>WESTERN BLOT</b>	1:2,000 - 1:10,000
	<b>IF MICROSCOPY</b>	User Optimized
	<b>OTHER APPLICATIONS</b>	User Optimized

**Purity and Specificity:** : This protein A purified antibody is directed against SARS Coronavirus 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 Link(s):** Swiss-Prot [P59595](#) NCBI Link [P59595](#)

**Immunogen:** This protein A purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a purified recombinant protein corresponding to full length SARS Coronavirus Nucleocapsid protein. Lifesensors Inc. ([www.lifesensors.com](http://www.lifesensors.com)) prepared the Nucleocapsid protein as follows: SUMO-Nucleocapsid fusion was expressed in *E.coli* in LB medium and purified using Ni-NTA resin (Qiagen) affinity chromatography. After the fusion was cleaved by the SUMO Protease (LifeSensors), the SUMO tag and protease were subtracted from the nucleocapsid using MAC and the nucleocapsid was finally purified using Cation Exchange Chromatography with the Macro-Prep High S resin (BioRad) and size exclusion chromatography.

**Protein Sequence: SARS Coronavirus Nucleocapsid (N) Protein, 422 aa, predicted MW 46.0 kDa**

1	msdngpqsnq	rsapritfgg	ptdstdnqn	ggrngarpkq	rrpqqlpnnt	aswftaltqh
61	gkeelfrfg	qgvpintnsg	pddqigyrr	atrrvrggdg	kmkelsprwy	fyylgtgpea
121	slpygankeg	ivwvategal	ntpkdhigtr	npnnaatvl	qlpqgttlpk	gfyaeagsrgg
181	sqassrsss	srgnsrnstp	gssrgnspar	masgggetal	allldrlnq	leskvsqkqg
241	qqqqqvtkk	saaeaskkpr	qkratkqyn	vtqafgrrgp	eqtqgnfgdq	dlihqgtdyk
301	hwpqiaqfap	sasaffgmsr	igmevtpsgt	wlyhgaikl	ddkdpqfkdn	villnkhida
361	yktfpptepk	kdkkkktdea	qplpqrqqkq	ptvllpaad	mddfsrqlqn	smsgasadst
421	qa					

**General References:**

- Zuo, X., et al. (2005). "Expression and purification of SARS Coronavirus Proteins using SUMO Fusions." *Protein Express Purif* **42**: 100-110).
- Zuo, X. et al. (2005). "Enhanced expression and purification of membrane proteins by SUMO fusion in Escherichia coli." *J Struct Funct Genomics* (In Press).
- Malakhov, M. P., et al. (2004). "SUMO fusion and SUMO-specific protease for efficient expression and purification of proteins." *J Struct Funct Genomics* **5**(1-2): 75-86.
- Butt, T. R. et al. (2005). "SUMO fusion technology for difficult-to-express proteins." *Protein Express Purif* (In Press).
- Marra, M.A., et al. (2003). "The genome sequence of the SARS-associated coronavirus." *Science* **300**(5624): 1399-1404.
- Surjit, M. et al. (2004). "The nucleocapsid protein of the SARS coronavirus is capable of self-association through a C-terminal 209 amino acid interaction domain." *Biochem. Biophys. Res. Commun.* **317**(4): 1030-1036.
- Lin Y. et al. (2003). "Identification an epitope of SARS-coronavirus nucleocapsid protein." *Cell Research* **13**(3): 141-145.
- Narayanan, K., et al. (2000). "Characterization of the coronavirus M protein and nucleocapsid interaction in infected cells." *J. Virol.* **74**(17): 8127-8134.
- Xu, X. et al. (2003). "Molecular model of SARS coronavirus polymerase: implications for biochemical functions and drug design." *Nucleic Acids Res.* **31**(24): 7117-7130.
- Ksiazek, T.G., et al. (2003). "A novel coronavirus associated with severe acute respiratory syndrome." *N. Engl. J. Med.* **348**(20): 1953-1966.
- Rota, P.A. et al. (2003). "Characterization of a novel coronavirus associated with severe acute respiratory syndrome." *Science* **300**(5624): 1394-1399.
- Muller, S. et al. (2001). "SUMO, ubiquitin's mysterious cousin." *Nat. Rev. Mol. Cell Biol.* **2**(3) 202-210.
- Melchior, F. (2000). "SUMO--nonclassical ubiquitin." *Annu. Rev. Cell Dev. Biol.* **16**: 591-626.

**Related Products:**

#200-401-A50	Protein A Purified Anti-SARS-CoV (N) Protein (Rabbit)	#200-401-A54	Protein A Purified Anti-SARS-CoV nsp13 (Rabbit)
#200-401-A51	Protein A Purified Anti-SARS-CoV 3CL Protease (Rabbit)	#200-401-A55	Protein A Purified Anti-SARS-CoV (M) Protein (Rabbit)
#200-401-A52	Protein A Purified Anti-SARS-CoV nsp3 (Rabbit)	#611-103-122	HRP Anti-RABBIT IgG (H&L) (GOAT) MX10
#200-401-A53	Protein A Purified Anti-SARS-CoV nsp8 (Rabbit)	#611-132-122	IRDye800 Anti-RABBIT IgG (H&L) (GOAT) MX10
#MB-070	Blocking Buffer for Fluorescent Western Blotting	#KIA-003	<b>MaxTag</b> <sup>TM</sup> Anti-RABBIT IgG Kit for Immunoblotting

**USDA Certification:** All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation.

**Note:** This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.