

Monoclonal Antibody to SARS-CoV-2 Nucleocapsid

Cat. No. AXSAR02MAB

Monoclonal Antibody

STORE AT -20 °C

Validated Assay Configuration – The following configuration represents the AssayProven™ recommended reagent combination for the validated application listed below.

VALIDATED APPLICATION	LFA
CAPTURE REAGENT	AXSAR01MAB
DETECTION REAGENT	AXSAR02MAB
PERFORMANCE EVALUATION MATERIAL	Recombinant SARS-CoV-2 nucleoprotein

Product Characteristics

SPECIES OF ORIGIN	Mouse
PRODUCTION SYSTEM	Hybridoma Cell Culture
RECOMBINANT	No
ISOTYPE	IgG
MOLECULAR WEIGHT	150 kDa (50 kDa heavy chain, 25 kDa light chain)
FULL-LENGTH PROTEIN	Yes
APPEARANCE	Clear liquid
FORMAT	Liquid
CONCENTRATION	≥1 mg/mL
METHOD TO DETERMINE CONCENTRATION	OD280
LYOPHILIZED	No
RECONSTITUTION METHOD	Not applicable
SONICATION REQUIRED PRIOR TO USE	No

Biological Characteristics

IMMUNOGEN	Recombinant SARS-CoV-2 nucleocapsid protein
IMMUNOGEN SEQUENCE	NC_045512 (RefSeq ID)
AMINO ACID SEQUENCE	Not characterized
TAG PROTEIN	Not applicable
EPITOPE	Not characterized
CROSS-REACTIVITY	No cross-reactivity with Influenza A, Influenza B, Parainfluenza, MERS-coronavirus, HMPV, Adenovirus, Rhinovirus, and RSV
IMMUNOREACTIVITY	Not characterized

Quality Attributes

PURITY	≥90%
METHOD TO DETERMINE PURITY	SDS-PAGE
PURIFICATION METHOD	Affinity chromatography
MAXIMUM BIOBURDEN	Not characterized

Binding Characteristics

ASSOCIATION RATE CONSTANT (K_a)	Not characterized
DISSOCIATION RATE CONSTANT (K_d)	Not characterized
EQUILIBRIUM DISSOCIATION CONSTANT (K_D)	Not characterized
BINDING DETERMINATION METHOD	Not characterized

Formulation

BUFFER / PH	PBS, pH 7.3
PRESERVATIVE	0.09% sodium azide

Storage & Stability

STORAGE TEMPERATURE	-20 °C
SHELF LIFE	36 months
STABILITY AT 2–8 °C	12 months
STABILITY AT -20 °C	36 months
STABILITY AT -40 °C	Not characterized
STABILITY AT -80 °C	Not characterized

Other Technical characteristics

ISOELECTRIC POINT (pI)	Not characterized
INACTIVATION METHOD	Not applicable

Notes & Safety Information

SAFETY INFORMATION	Refer to the appropriate Safety Data Sheet (SDS) for additional information.
NOTES	This reagent has been manufactured under ISO 13485 quality management system and is suitable for research or further manufacturing use only. Centrifuge before opening to ensure complete recovery of vial contents.

Performance Validation Report

The following pages contain the applicable AssayProven™ Performance Validation Report.

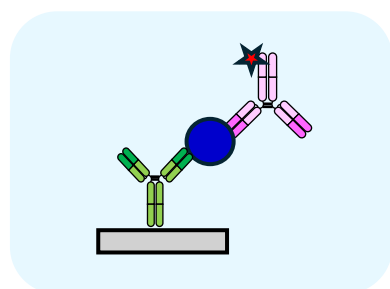
AssayProven™ Recommended SARS-CoV-2 Antibody Pair

Recommended Pair Summary

Multiple antibody combinations were screened under standardized assay conditions to identify the optimal antibody pair for lateral flow immunoassay development. The recommended AssayProven™ SARS-CoV-2 antibody pair demonstrated the best overall analytical performance, including excellent analytical sensitivity against recombinant antigen, cultured viral strains, and the WHO International Standard, high clinical specificity, and no detectable cross-reactivity with common respiratory pathogens, supporting its suitability for lateral flow immunoassay development.

Category	Target	Format	Item Type	Cat. #	Description	Function
Respiratory	SARS-CoV-2	LFA	Antibody	AXSAR01MAB	mAb to SARS-CoV-2 NP	Capture
			Antibody	AXSAR02MAB	mAb to SARS-CoV-2 NP	Detector
			Antigen	AXSAR03RAG	Recombinant SARS-CoV-2 NP	Analyte

Method: Sandwich lateral flow immunoassay (LFA)



Meridian capture antibody immobilized on membrane



Meridian recombinant antigen



Meridian detection antibody

Figure 1. Schematic diagram of a sandwich lateral flow immunoassay using AssayProven™ antibody pairs.

Analytical & Clinical Performance

Analyte	Source	Limit of Detection
Rec. SARS-CoV-2 nucleoprotein	Meridian	0.1 ng/mL
SARS-CoV-2 (BetaCoV/Korea/KCDC03/2020) virus (NCCP 43326)	NCCP	5.94×10^1 TCID ₅₀ /mL
SARS-CoV-2 (Delta) virus (NCCP 43390)	NCCP	3.21×10^1 TCID ₅₀ /mL
WHO International Standard for SARS-CoV-2 Ag (21/368) (Omicron B.1.1.529, Sub-variant BA.1)	NIBSC	1.56×10^2 TCID ₅₀ /mL

Table 1. Analytical sensitivity of the AssayProven™ SARS-CoV-2 antibody pair using recombinant antigen, cultured viral strains, and the WHO International Standard.

Clinical specificity: 99.5% (400/402) using 402 SARS-CoV-2-negative clinical samples, which were confirmed as negative using a commercial molecular assay, Allplex™ SARS-CoV-2 Assay (Seegene, RV10248X).

Potential cross-reactivity: no cross-reactivity was observed using samples positive for Influenza A, Influenza B, Parainfluenza, MERS-coronavirus, HMPV, Adenovirus, Rhinovirus, and RSV.