SARS-CoV-2 NSP7 Alexa Fluor® 594-conjugated Antibody

Monoclonal Mouse IgG_{2A} Clone # 1045511

Catalog Number: FAB12505T

100 µg

DESCRIPTION

Species Reactivity	SARS-CoV-2
Specificity	Detects SARS-CoV-2 NSP7 in direct ELISAs.
Source	Monoclonal Mouse IgG_{2A} Clone # 1045511
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived SARS-CoV-2 NSP7 protein Ser1-Gln83 Accession # YP_009725303.1
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

Western Blot	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Non-structural protein 7 (NSP7) is one of several functional proteins released by ORF1a-encoded protease cleavage of the pp1a and pp1ab replicase polyproteins expressed from the coronavirus (CoV) genome (1). The NSPs are involved in the replication and transcription of the viral RNA and not incorporated within the virion particles. Coronaviruses include various highly pathogenic strains such as SARS-CoV, MERS-CoV and SARS-CoV-2 that have had significant impact on humans in addition to strains that have negatively impacted livestock. NSP7 is a small 83 amino acid protein that is highly conserved across coronaviruses (1). The NSP7 monomers are composed of a central core N-terminal tri-helical bundle with an additional short C-terminal helix (2). The monomeric units associate to form a large hexadecameric structure with NSP8 (2) where layers of NSP7 fill the spaces in between NSP8 units. The supercomplexes are stacked to form a channel with electrostatic properties that could allow RNA to pass through the channel to facilitate efficient replication and transcription. The NSP7/NSP8 supercomplex was thereby proposed to function as a primase for the viral RNA-dependent RNA polymerase (RdRp), NSP12 (3). In SARS-CoV-2, the RdRp has been shown to have little activity without NSP8/7 as cofactors (4) making NSP7/NSP8 critical for viral polymerase activity. NSP7 has also been shown to interact with several other viral NSP proteins, including NSP5, NSP9, and NSP13 (5) as well as multiple host cell proteins involved in membrane trafficking, signaling, and electron transport including potential drug targets such as COMT and PTGES (6).

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