10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SARS virus Sm Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6000b

Product Information

Application	WB, E
Primary Accession	P59594
Reactivity	SARS
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	139125
Antigen Region	532-562

Additional Information

Other Names	Spike glycoprotein, S glycoprotein, E2, Peplomer protein, Spike protein S1, Spike protein S2, S
Target/Specificity	This SARS virus Sm antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 532-562 amino acids from the middle of SARS CoV Spike protein.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SARS virus Sm Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	S {ECO:0000255|HAMAP-Rule:MF_04099}
Function	[Spike glycoprotein]: May down-regulate host tetherin (BST2) by lysosomal degradation, thereby counteracting its antiviral activity.
Cellular Location	Virion membrane {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:15831954}; Single-pass type I membrane protein {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:15831954}. Host endoplasmic reticulum-Golgi intermediate compartment membrane

{ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:20861307}; Single- pass type I membrane protein {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:15831954}. Host cell membrane {ECO:0000255|HAMAP- Rule:MF_04099, ECO:0000269|PubMed:15831954}; Single-pass type I membrane protein {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:15831954}. Note=Accumulates in the endoplasmic reticulum-Golgi intermediate compartment, where it participates in virus particle assembly. Colocalizes with S in the host endoplasmic reticulum-Golgi intermediate compartment (PubMed:20861307). Some S oligomers are transported to the host plasma membrane, where they may mediate cell-cell fusion. {ECO:0000255|HAMAP-Rule:MF_04099, ECO:0000269|PubMed:20861307}

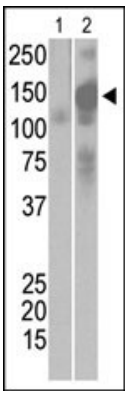
Background

An outbreak of atypical pneumonia, referred to as severe acute respiratory syndrome (SARS) and first identified in Guangdong Province, China, has spread to several countries. The severity of this disease is such that the mortality rate appears to be ~3 to 6%. A number of laboratories worldwidehave undertaken the identification of the causative agent. The National Microbiology Laboratory in Canada obtained the Tor2 isolate from a patient in Toronto, and succeeded in growing a coronavirus-like agent in African Green Monkey Kidney (Vero E6) cells. This coronavirus has been named publicly by the World Health Organization and member laboratories as ?SARS virus? The SARS membrane proteins, including the major proteins S (Spike) and M (Membrane), are inserted into the endoplasmic reticulum Golgi intermediate compartment (ERGIC) while full length replicated RNA (+ strands) assemble with the N (nucleocapsid) protein. The virus then migrates through the Golgi complex and eventually exits the cell, likely by exocytosis. The site of viral attachment to the host cell resides within the S protein. Oligomeric spike (S) glycoproteins extend from SARS membranes. These integral membrane proteins assemble within the endoplasmic reticulum of infected cells and are subsequently endoproteolyzed in the Golgi, generating noncovalently associated S1 and S2 fragments. Once on the surface of infected cells and virions, peripheral S1 fragments bind carcinoembryonic antigen-related cell adhesion molecule (CEACAM) receptors, and this triggers membrane fusion reactions mediated by integral membrane S2 fragments.

References

He, R., et al., Biochem. Biophys. Res. Commun. 316(2):476-483 (2004). Snijder, E.J., et al., J. Mol. Biol. 331(5):991-1004 (2003). Marra, M.A., et al., Science 300(5624):1399-1404 (2003). Krokhin, O., et al., Mol Cell Proteomics 2(5):346-356 (2003).

Images



The anti-SARS-Sm Pab (Cat. #AP6000b) is used in Western blot to detect recombinant Spike proteins, aa17-537 (Lane 1) and aa17-756 (Lane 2).

Citations

- Mucosal immunization with surface-displayed severe acute respiratory syndrome coronavirus spike protein on Lactobacillus casei induces neutralizing antibodies in mice.
- Coronaviral hypothetical and structural proteins were found in the intestinal surface enterocytes and pneumocytes of severe acute respiratory syndrome (SARS).
- Severe acute respiratory syndrome (SARS) S protein production in plants: development of recombinant vaccine.
- Severe acute respiratory syndrome coronavirus 3a protein is a viral structural protein.
- Resolution of primary severe acute respiratory syndrome-associated coronavirus infection requires Stat1.
- Synthesis and characterization of a native, oligomeric form of recombinant severe acute respiratory syndrome coronavirus spike glycoprotein.