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

SRPK1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7727b

Product Information

Application	FC, WB, E
Primary Accession	Q96SB4
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB9188
Calculated MW	74325
Antigen Region	538-567

Additional Information

Gene ID	6732
Other Names	SRSF protein kinase 1, SFRS protein kinase 1, Serine/arginine-rich protein-specific kinase 1, SR-protein-specific kinase 1, SRPK1 {ECO:0000312|EMBL:CAC392991}
Target/Specificity	This SRPK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 538-567 amino acids from the C-terminal region of human SRPK1.
Dilution	FC~~1:10~50 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	SRPK1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SRPK1 {ECO:0000312|EMBL:CAC39299.1}
Function	Serine/arginine-rich protein-specific kinase which specifically phosphorylates its substrates at serine residues located in regions rich in

	arginine/serine dipeptides, known as RS domains and is involved in the phosphorylation of SR splicing factors and the regulation of splicing. Plays a central role in the regulatory network for splicing, controlling the intranuclear distribution of splicing factors in interphase cells and the reorganization of nuclear speckles during mitosis. Can influence additional steps of mRNA maturation, as well as other cellular activities, such as chromatin reorganization in somatic and sperm cells and cell cycle progression. Isoform 2 phosphorylates SFRS2, ZRSR2, LBR and PRM1. Isoform 2 phosphorylates SRSF1 using a directional (C-terminal to N-terminal) and a dual-track mechanism incorporating both processive phosphorylation (in which the kinase stays attached to the substrate after each round of phosphorylation) and distributive phosphorylation steps (in which the kinase and substrate dissociate after each phosphorylation event). The RS domain of SRSF1 binds first to a docking groove in the large lobe of the kinase domain of SRPK1. This induces certain structural changes in SRPK1 and/or RRM2 domain of SRSF1, allowing RRM2 to bind the kinase and initiate phosphorylation. The cycles continue for several phosphorylation steps in a processive manner (steps 1-8) until the last few phosphorylation steps (approximately steps 9-12). During that time, a mechanical stress induces the unfolding of the beta-4 motif in RRM2, which then docks at the docking groove of SRPK1. This also signals RRM2 to begin to dissociate, which facilitates SRSF1 dissociation after phosphorylation is completed. Isoform 2 can mediate hepatitis B virus (HBV) core protein phosphorylation. It plays a negative role in the regulation of HBV replication through a mechanism not involving the phosphorylation of the core protein but by reducing the packaging efficiency of the pregenomic RNA (pgRNA) without affecting the formation of the viral core particles. Isoform 1 and isoform 2 can induce splicing of exon 10 in MAPT/TAU. The ratio of isoform 1/isoform 2 plays a decisive role in determining cell fate in K-562 leukemic cell line: isoform 2 favors proliferation where as isoform 1 favors differentiation. Phosphorylates the N-terminus of ERC1 (PubMed:30745339).
Cellular Location	[Isoform 2]: Cytoplasm. Nucleus. Nucleus matrix. Microsome. Note=Shuttles between the nucleus and the cytoplasm Inhibition of the Hsp90 ATPase activity, osmotic stress and interaction with HHV-1 ICP27 protein can induce its translocation to the nucleus KAT5/TIP60 inhibits its nuclear translocation Cytoplasm. Nucleus, nucleoplasm. Nucleus speckle. Chromosome. Note=Preferentially localizes to the promoter of gene coding regions.
Tissue Location	Isoform 2 is predominantly expressed in the testis but is also present at lower levels in heart, ovary, small intestine, liver, kidney, pancreas and skeletal muscle. Isoform 1 is only seen in the testis, at lower levels than isoform 2. Highly expressed in different erythroid and lymphoid cell lines, with isoform 2 being far more abundant than isoform 1.

Background

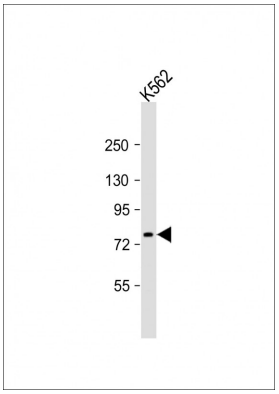
This gene encodes a serine/arginine protein kinase specific for the SR (serine/arginine-rich domain) family of splicing factors. The protein localizes to the nucleus and the cytoplasm. It is thought to play a role in regulation of both constitutive and alternative splicing by regulating intracellular localization of splicing factors. A second alternatively spliced transcript variant for this gene has been described, but its full length nature has not been determined.

References

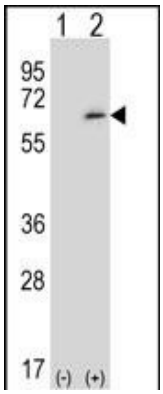
Daub, H., et al., J. Virol. 76(16):8124-8137 (2002).
Nikolakaki, E., et al., J. Biol. Chem. 276(43):40175-40182 (2001).
Wang, H.Y., et al., Genomics 57(2):310-315 (1999).
Papoutsopoulou, S., et al., Nucleic Acids Res. 27(14):2972-2980 (1999).

Gui, J.F., et al., Nature 369(6482):678-682 (1994).

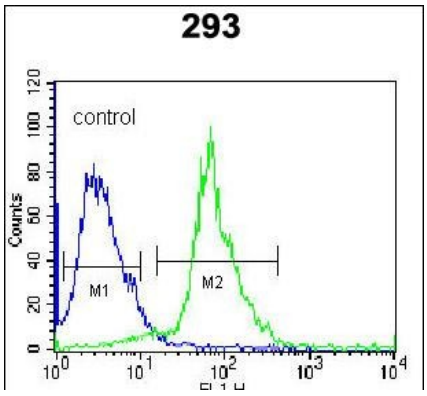
Images



Anti-SRPK1 Antibody (N-term)at 1:2000 dilution + K562 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 74 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Western blot analysis of SRPK1 (arrow) using rabbit polyclonal SRPK1 Antibody (C-term) (Cat. #AP7727b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the SRPK1 gene.



SRPK1 Antibody (C-term) (Cat. #AP7727b) flow cytometric analysis of 293 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.