

SRPK1 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP7552a

Specification

SRPK1 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession [Q96SB4](#)

SRPK1 Antibody (N-term) Blocking Peptide - 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:CAF392991}

Target/Specificity

The synthetic peptide sequence used to generate the antibody AP7552a was selected from the N-term region of human SRPK1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

SRPK1 Antibody (N-term) Blocking Peptide - Protein Information

Name SRPK1 {ECO:0000312|EMBL:CAF39299.1}

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 whereas 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.

SRPK1 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

SRPK1 Antibody (N-term) Blocking Peptide - Images

SRPK1 Antibody (N-term) Blocking Peptide - 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.

SRPK1 Antibody (N-term) Blocking Peptide - References

Blume-Jensen P, et al. Nature 2001. 411: 355.Cantrell D, J. Cell Sci. 2001. 114: 1439.Jiang S, Oncogene 2000. 19: 5590.Manning G, et al. Science 2002. 298: 1912.Moller, D, et al. Am. J. Physiol. 1994. 266: C351-C359.Robertson, S, et al. Trends Genet. 2000. 16: 368.Robinson D, et al. Oncogene 2000. 19: 5548.Van der Ven, P, et al. Hum. Molec. Genet. 1993. 2: 1889.Vanhaesebroeck, B, et al. Biochem. J. 2000. 346: 561.Van Weering D, et al. Recent Results Cancer Res. 1998. 154: 271.