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SRC Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1181a

Product Information

Application	WB, E
Primary Accession	P12931
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	5D10C4
Isotype	IgG2a
Calculated MW	59835
Description	SRC: v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian). This gene is highly similar to the v-src gene of Rous sarcoma virus. This proto-oncogene may play a role in the regulation of embryonic development and cell growth. The protein encoded by this gene is a tyrosine-protein kinase whose activity can be inhibited by phosphorylation by c-SRC kinase. Mutations in this gene could be involved in the malignant progression of colon cancer. Two transcript variants encoding the same protein have been found for this gene.
Immunogen	Purified recombinant fragment of SRC (aa10-193) expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	6714
Other Names	Proto-oncogene tyrosine-protein kinase Src, 2.7.10.2, Proto-oncogene c-Src, pp60c-src, p60-Src, SRC, SRC1
Dilution	WB~~1/500 - 1/2000 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SRC Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SRC (HGNC:11283)

Synonyms	SRC1
Function	Non-receptor protein tyrosine kinase which is activated following engagement of many different classes of cellular receptors including immune response receptors, integrins and other adhesion receptors, receptor protein tyrosine kinases, G protein-coupled receptors as well as cytokine receptors (PubMed:34234773). Participates in signaling pathways that control a diverse spectrum of biological activities including gene transcription, immune response, cell adhesion, cell cycle progression, apoptosis, migration, and transformation. Due to functional redundancy between members of the SRC kinase family, identification of the specific role of each SRC kinase is very difficult. SRC appears to be one of the primary kinases activated following engagement of receptors and plays a role in the activation of other protein tyrosine kinase (PTK) families. Receptor clustering or dimerization leads to recruitment of SRC to the receptor complexes where it phosphorylates the tyrosine residues within the receptor cytoplasmic domains. Plays an important role in the regulation of cytoskeletal organization through phosphorylation of specific substrates such as AFAP1. Phosphorylation of AFAP1 allows the SRC SH2 domain to bind AFAP1 and to localize to actin filaments. Cytoskeletal reorganization is also controlled through the phosphorylation of cortactin (CTTN) (Probable). When cells adhere via focal adhesions to the extracellular matrix, signals are transmitted by integrins into the cell resulting in tyrosine phosphorylation of a number of focal adhesion proteins, including PTK2/FAK1 and paxillin (PXN) (PubMed:21411625). In addition to phosphorylating focal adhesion proteins, SRC is also active at the sites of cell-cell contact adherens junctions and phosphorylates substrates such as beta-catenin (CTNNB1), delta-catenin (CTNND1), and plakoglobin (JUP). Another type of cell- cell junction, the gap junction, is also a target for SRC, which phosphorylates connexin-43 (GJA1). SRC is implicated in regulation of pre-mRNA-processing and phosphorylates RNA-binding proteins such as KHDRBS1 (Probable). Phosphorylates PKP3 at 'Tyr-195' in response to reactive oxygen species, which may cause the release of PKP3 from desmosome cell junctions into the cytoplasm (PubMed:25501895). Also plays a role in PDGF-mediated tyrosine phosphorylation of both STAT1 and STAT3, leading to increased DNA binding activity of these transcription factors (By similarity). Involved in the RAS pathway through phosphorylation of RASA1 and RASGRF1 (PubMed:11389730). Plays a role in EGF-mediated calcium-activated chloride channel activation (PubMed:18586953). Required for epidermal growth factor receptor (EGFR) internalization through phosphorylation of clathrin heavy chain (CLTC and CLTCL1) at 'Tyr-1477'. Involved in beta-arrestin (ARRB1 and ARRB2) desensitization through phosphorylation and activation of GRK2, leading to beta-arrestin phosphorylation and internalization. Has a critical role in the stimulation of the CDK20/MAPK3 mitogen-activated protein kinase cascade by epidermal growth factor (Probable). Might be involved not only in mediating the transduction of mitogenic signals at the level of the plasma membrane but also in controlling progression through the cell cycle via interaction with regulatory proteins in the nucleus (PubMed:7853507). Plays an important role in osteoclastic bone resorption in conjunction with PTK2B/PYK2. Both the formation of a SRC- PTK2B/PYK2 complex and SRC kinase activity are necessary for this function. Recruited to activated integrins by PTK2B/PYK2, thereby phosphorylating CBL, which in turn induces the activation and recruitment of phosphatidylinositol 3-kinase to the cell membrane in a signaling pathway that is critical for osteoclast function (PubMed:14585963, PubMed:8755529). Upon activation of the G(q)-dependent KISS1/KISS1R signaling pathway, active SRC is recruited, together with the phosphatase DUSP18, to the KISS1R C-terminus (PubMed:38346942). This leads to DUSP18-mediated SRC dephosphorylation and inactivation, down-regulation of osteoclast differentiation and activity, and consequently suppression of bone resorption (By similarity). Promotes energy production in osteoclasts by activating mitochondrial cytochrome C oxidase

(PubMed:12615910). Phosphorylates DDR2 on tyrosine residues, thereby promoting its subsequent autophosphorylation (PubMed:16186108). Phosphorylates RUNX3 and COX2 on tyrosine residues, TNK2 on 'Tyr-284' and CBL on 'Tyr-731' (PubMed:20100835, PubMed:21309750). Enhances RIGI-elicited antiviral signaling (PubMed:19419966). Phosphorylates PDPK1 at 'Tyr-9', 'Tyr-373' and 'Tyr-376' (PubMed:14585963). Phosphorylates BCAR1 at 'Tyr-128' (PubMed:22710723). Phosphorylates CBLC at multiple tyrosine residues, phosphorylation at 'Tyr-341' activates CBLC E3 activity (PubMed:20525694). Phosphorylates synaptic vesicle protein synaptophysin (SYP) (By similarity). Involved in anchorage-independent cell growth (PubMed:19307596). Required for podosome formation (By similarity). Mediates IL6 signaling by activating YAP1-NOTCH pathway to induce inflammation-induced epithelial regeneration (PubMed:25731159). Phosphorylates OTUB1, promoting deubiquitination of RPTOR (PubMed:35927303). Phosphorylates caspase CASP8 at 'Tyr-380' which negatively regulates CASP8 processing and activation, down-regulating CASP8 proapoptotic function (PubMed:16619028). Mediates laminin-induced activation of RAC1 signaling through phosphorylation of syntrophin (By similarity).

Cellular Location

Cell membrane; Lipid-anchor. Mitochondrion inner membrane. Nucleus. Cytoplasm, cytoskeleton. Cytoplasm, perinuclear region. Cell junction, focal adhesion. Cell junction. Note=Localizes to focal adhesion sites following integrin engagement (PubMed:22801373). Localization to focal adhesion sites requires myristoylation and the SH3 domain (PubMed:7525268). Colocalizes with PDLIM4 at the perinuclear region, but not at focal adhesions (PubMed:19307596)

Tissue Location

Expressed ubiquitously. Expressed in the skin (at protein level) (PubMed:22294297). Platelets, neurons and osteoclasts express 5-fold to 200-fold higher levels than most other tissues [Isoform 2]: Expressed in brain.

References

1. Pancreas. 2005 Oct;31(3):263-74. 2. Clin Exp Metastasis. 2005;22(3):195-204. 3. J Mol Biol. 2005 Oct 21;353(2):222-31.

Images

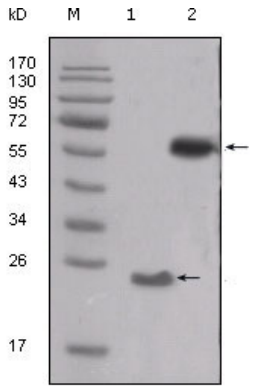


Figure 1: Western blot analysis using SRC mouse mAb against truncated SRC-His recombinant protein (1) and PMA treated THP-1 cell lysate (2).

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