Src, Substrate Peptide (Biotin) Peptide – Synthetic Peptide, >90% by HPLC Purity

PRODUCT OVERVIEW

Product Name	Src, Substrate Peptide
Full Product Name	Src, Substrate Peptide (Biotin)
Product Gene Name	Src peptide
Host	Synthetic peptide
Form/Format	Supplied as a lyophilized powder. Conjugated to Biotin.
Purity/Purification	Highly Purified > 90% by HPLC
Preparation and Storage	Lyophilized powder may be stored at 4 degree C for short-term only. Stable for 12 months at -20 degree C. Reconstitute to nominal volume (see reconstitution instructions for peptides) and store at -20 degree C. For maximum recovery of product, centrifuge the original vial prior to removing the cap. Further dilutions can be made in assay buffer.
Molecular Weight	60,645 Da
Chromosome Location	Chromosome: 2; NC_000068.7 (157424293..157471838). Location: 2 H1; 2 78.35 cM
Product Categories/Family for Src peptide	Molecular Biology; MB-Peptides
Application Notes for Src peptide	Analytical Tests: Peptide identity confirmed by MALDI-ToF MS and Amino Acid analysis., Kinase Assay: Substrate for Src, active.
Related Product Information for Src peptide	Synthetic peptide (biotin- 6-aminohexanoic acid-KVEKIGEGTYGVVYKCONH2) (linear) corresponding to aa6-20 of p34cdc2.
Other Notes	Small volumes of Src peptide vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Src purchase	MBS659770 is a peptide targeting Src. Also known as Src, Substrate Peptide (Biotin). Host: Synthetic peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Src. It may not necessarily be applicable to this product.

NCBI GI #	62635494
NCBI GeneID	20779
NCBI Accession #	AAX90616.1
UniProt Primary Accession #	P05480
UniProt Secondary Accession #	Q2M4I4
UniProt Related Accession #	P05480
NCBI Official Full Name	Src
NCBI Official Synonym Full Names	Rous sarcoma oncogene
NCBI Official Symbol	Src
NCBI Official Synonym Symbols	AW259666; pp60c-src

UniProt Protein Name	Neuronal proto-oncogene tyrosine-protein kinase Src
UniProt Synonym Protein Names	Proto-oncogene c-Src; pp60c-src
Protein Family	Neuronal proto-oncogene tyrosine-protein kinase
UniProt Gene Name	Src
UniProt Synonym Gene Names	p60-Src
UniProt Entry Name	SRC_MOUSE
NCBI Protein Information	neuronal proto-oncogene tyrosine-protein kinase Src; p60-Src; proto-oncogene c-Src

UniProt Comments for Src

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. 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). 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). 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. Also plays a role in PDGF-mediated tyrosine phosphorylation of both STAT1 and STAT3, leading to increased DNA binding activity of these transcription factors. Involved in the RAS pathway through phosphorylation of RASA1 and RASGRF1. Plays a role in EGF-mediated calcium-activated chloride channel activation. 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 ADRBK1, 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. 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. 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. Promotes energy production in osteoclasts by activating mitochondrial cytochrome C oxidase. Phosphorylates DDR2 on tyrosine residues, thereby promoting its subsequent autophosphorylation. Phosphorylates RUNX3 and COX2 on tyrosine residues, TNK2 on 'Tyr-284' and CBL on 'Tyr-731'. Enhances DDX58/RIG-I-elicited antiviral signaling. Phosphorylates PDPK1 at 'Tyr-9', 'Tyr-373' and 'Tyr-376'

By similarity. Phosphorylates BCAR1 at 'Tyr-132'

By similarity. Ref.7 Ref.9 Ref.13 Ref.15

Catalytic activity: ATP + a [protein]-L-tyrosine = ADP + a [protein]-L-tyrosine phosphate.

Enzyme regulation: Phosphorylation by CSK at Tyr-535 inhibits kinase activity. Inhibitory phosphorylation at Tyr-535 is enhanced by heme. Further phosphorylation by CDK1 partially reactivates CSK-inactivated SRC and facilitates complete reactivation by protein tyrosine phosphatase PTPRC. Integrin engagement stimulates kinase activity. Phosphorylation by PTK2/FAK1 enhances kinase activity. Butein and pseudosubstrate-based peptide inhibitors like CIYKYYF act as inhibitors. Phosphorylation at Tyr-424 increases kinase activity. Ref.8

Subunit structure: Interacts with CDCP1, PELP1, TGFB1I1 and TOM1L2

By similarity. Interacts with DDEF1/ASAP1 via its SH3 domain. Interacts with CCPG1. Interacts with the cytoplasmic domain of MUC1, phosphorylates it and increases binding of MUC1 with beta-catenin. Interacts with RALGPS1 via its SH3 domain. Interacts with CAV2 (tyrosine phosphorylated form). Interacts (via the SH3 domain and the protein kinase domain) with ARRB1; the interaction is independent of the phosphorylation state of SRC C-terminus. Interacts with FCAMR and PXN. Interacts with ARRB2. Interacts with ARRB1. Interacts with SRCIN1

By similarity. Interacts with SRCIN1. Interacts with NDFIP2 and more weakly with NDFIP1. Interacts with PIK3CA and/or PIK3C2B, PTK2/FAK1, ESR1 (dimethylated on arginine) and FAK. Interacts (via SH2 and SH3 domain) with TNK2. Interacts (via protein kinase domain) with the tyrosine phosphorylated form of RUNX3 (via runt domain). Interacts with TRAF3 (via RING-type zinc finger domain). Interacts with DDX58, MAVS and TBK1. Interacts (via SH2 domain) with GNB2L1/RACK1; the interaction is enhanced by tyrosine phosphorylation of GNB2L1 and inhibits SRC activity

By similarity. Interacts (via SH2 domain) with the 'Tyr-402' phosphorylated form of PTK2B/PYK2. Interacts (via SH2 domain) with FLT3 (tyrosine phosphorylated). Identified in a complex containing FGFR4, NCAM1, CDH2, PLCG1, FRS2, SRC, SHC1, GAP43 and CTTN. Interacts with EPHB1; activates the MAPK/ERK cascade to regulate cell migration. Interacts with ERBB2 and STAT1. Interacts with PDGFRA (tyrosine phosphorylated). Interacts with CSF1R. Interacts (via SH2 domain) with the 'Tyr-9' phosphorylated form of PDPK1. Interacts with DDR2. Interacts with AMOTL2; this interaction regulates the translocation of phosphorylated SRC to peripheral cell-matrix adhesion

Research Articles on Src	**1.** The H2O2-induced src/PDGFRbeta/SK1 signaling cascade was impaired in nSMase2-deficient fro/fro cells and was rescued by exogenous C2Cer that activated src/PDGFRbeta/SK1.
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