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Mouse Ptk2b Blocking Peptide (P851)

Synthetic peptide
Catalog # BP21617a

Specification

Mouse Ptk2b Blocking Peptide (P851) - Product Information

Primary Accession Q9QVP9

Mouse Ptk2b Blocking Peptide (P851) - Additional Information

Gene ID 19229

Other Names
Protein-tyrosine kinase 2-beta, Calcium-dependent tyrosine kinase, CADTK, Calcium-regulated non-receptor proline-rich tyrosine kinase, Cell adhesion kinase beta, CAK-beta, CAKB, Focal adhesion kinase 2, FADK 2, Proline-rich tyrosine kinase 2, Related adhesion focal tyrosine kinase, RAFTK, Ptk2b, Fak2, Pyk2, Raftk

Target/Specificity
The synthetic peptide sequence is selected from aa 851-865 of HUMAN Ptk2b

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.

Mouse Ptk2b Blocking Peptide (P851) - Protein Information

Name Ptk2b

Synonyms Fak2, Pyk2, Raftk

Function
Non-receptor protein-tyrosine kinase that regulates reorganization of the actin cytoskeleton, cell polarization, cell migration, adhesion, spreading and bone remodeling. Plays a role in the regulation of the humoral immune response, and is required for normal levels of marginal B-cells in the spleen and normal migration of splenic B-cells. Required for normal macrophage polarization and migration towards sites of inflammation. Regulates cytoskeleton rearrangement and cell spreading in T-cells, and contributes to the regulation of T-cell responses. Promotes osteoclastic bone resorption; this requires both PTK2B/PYK2 and SRC. May inhibit differentiation and activity of osteoprogenitor cells. Functions in signaling downstream of integrin and collagen receptors, immune receptors, G-protein coupled receptors (GPCR), cytokine, chemokine and growth factor receptors, and mediates responses to cellular stress. Forms multisubunit signaling complexes with

SRC and SRC family members upon activation; this leads to the phosphorylation of additional tyrosine residues, creating binding sites for scaffold proteins, effectors and substrates. Regulates numerous signaling pathways. Promotes activation of phosphatidylinositol 3-kinase and of the AKT1 signaling cascade. Promotes activation of NOS3. Regulates production of the cellular messenger cGMP. Promotes activation of the MAP kinase signaling cascade, including activation of MAPK1/ERK2, MAPK3/ERK1 and MAPK8/JNK1. Promotes activation of Rho family GTPases, such as RHOA and RAC1. Recruits the ubiquitin ligase MDM2 to P53/TP53 in the nucleus, and thereby regulates P53/TP53 activity, P53/TP53 ubiquitination and proteasomal degradation. Acts as a scaffold, binding to both PDPK1 and SRC, thereby allowing SRC to phosphorylate PDPK1 at 'Tyr-9, 'Tyr-373', and 'Tyr-376' (By similarity). Promotes phosphorylation of NMDA receptors by SRC family members, and thereby contributes to the regulation of NMDA receptor ion channel activity and intracellular Ca(2+) levels. May also regulate potassium ion transport by phosphorylation of potassium channel subunits. Phosphorylates SRC; this increases SRC kinase activity. Phosphorylates ASAP1, NPHP1, KCNA2 and SHC1. Promotes phosphorylation of ASAP2, RHOU and PXN; this requires both SRC and PTK2/PYK2 (By similarity).

Cellular Location
Cytoplasm. Cytoplasm, perinuclear region. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Cell junction, focal adhesion. Cell projection, lamellipodium. Cytoplasm, cell cortex. Nucleus. Note=Colocalizes with integrins at the cell periphery (By similarity). Interaction with NPHP1 induces the membrane- association of the kinase. Colocalizes with PXN at the microtubule- organizing center. The tyrosine phosphorylated form is detected at cell-cell contacts.

Mouse Ptk2b Blocking Peptide (P851) - Protocols

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

- Blocking Peptides

Mouse Ptk2b Blocking Peptide (P851) - Images

Mouse Ptk2b Blocking Peptide (P851) - Background

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Avraham S.,et al.J. Biol. Chem. 270:27742-27751(1995).
Church D.M.,et al.PLoS Biol. 7:E1000112-E1000112(2009).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.
Lubec G.,et al.Submitted (JAN-2009) to UniProtKB.
Salgia R.,et al.J. Biol. Chem. 271:31222-31226(1996).