PTK2 Antibody (Center) Blocking Peptide

PRODUCT OVERVIEW

Product Name	PTK2, Blocking Peptide
Full Product Name	PTK2 Antibody (Center) Blocking Peptide
Product Gene Name	PTK2 blocking peptide
Product Synonym Gene Name	FAK; FAK1
Product Synonym Names	Focal adhesion kinase 1; FADK 1; Focal adhesion kinase-related nonkinase; FRNK; Protein phosphatase 1 regulatory subunit 71; PPP1R71; Protein-tyrosine kinase 2; p125FAK; pp125FAK; PTK2; FAK; FAK1
Form/Format	Synthetic peptide was lyophilized with 100% acetonitrile and is supplied as a powder. Reconstitute with 0.1 ml DI water for a final concentration of 1 mg/ml.
Specificity	The synthetic peptide sequence used to generate the antibody was selected from the Center region of human PTK2. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 6 months. For long term storage store at -20 degree C.
Antibody/Peptide Pairs	PTK2 peptide (MBS9227741) is used for blocking the activity of PTK2 antibody (MBS9211119)
Molecular Weight	114,253 Da
OMIM	600758
Cellular Location	Cell junction, focal adhesion. Cell membrane; Peripheral membrane protein; Cytoplasmic side Cytoplasm, cell cortex. Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Nucleus. Note: Constituent of focal adhesions Detected at microtubules
Tissue Location	Detected in B and T-lymphocytes. Isoform 1 and isoform 6 are detected in lung fibroblasts (at protein level) Ubiquitous.
Related Product Information for PTK2 blocking peptide	Non-receptor protein-tyrosine kinase that plays an essential role in regulating cell migration, adhesion, spreading, reorganization of the actin cytoskeleton, formation and disassembly of focal adhesions and cell protrusions, cell cycle progression, cell proliferation and apoptosis. Required for early embryonic development and placenta development. Required for embryonic angiogenesis, normal cardiomyocyte migration and proliferation, and normal heart development. Regulates axon growth and neuronal cell migration, axon branching and synapse formation; required for normal development of the nervous system. Plays a role in osteogenesis and differentiation of osteoblasts. Functions in integrin signal transduction, but also in signaling downstream of numerous growth factor receptors, G-protein coupled receptors (GPCR), EPHA2, netrin receptors and LDL receptors. 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 the AKT1 signaling cascade. Promotes activation of MAPK1/ERK2, MAPK3/ERK1 and the MAP kinase signaling cascade. Promotes localized and transient activation of guanine nucleotide exchange factors (GEFs) and GTPase-activating proteins (GAPs), and thereby modulates the activity of Rho family GTPases. Signaling via CAS family members mediates activation of RAC1. Recruits the ubiquitin ligase MDM2 to P53/TP53 in the nucleus, and thereby regulates P53/TP53 activity, P53/TP53 ubiquitination and proteasomal degradation. Phosphorylates SRC; this increases SRC kinase activity. Phosphorylates ACTN1, ARHGEF7, GRB7, RET and WASL. Promotes phosphorylation of PXN and STAT1; most likely PXN and STAT1 are phosphorylated by a SRC family kinase that is recruited to autophosphorylated PTK2/FAK1, rather than by PTK2/FAK1 itself. Promotes phosphorylation of BCAR1; GIT2 and SHC1; this requires both SRC and PTK2/FAK1. Promotes phosphorylation of BMX and PIK3R1. Isoform 6 (FRNK) does not contain a kinase domain and inhibits PTK2/FAK1 phosphorylation and signaling. Its enhanced expression can attenuate the nuclear accumulation of LPXN and limit its ability to enhance serum response factor (SRF)-dependent gene transcription.

Other Notes	Small volumes of PTK2 blocking 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 PTK2 purchase	MBS9227741 is a blocking peptide targeting PTK2. Also known as PTK2 Antibody (Center) Blocking Peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PTK2. It may not necessarily be applicable to this product.

NCBI GI #	3183518
NCBI GeneID	5747
NCBI Accession #	Q05397.2
UniProt Primary Accession #	Q05397
UniProt Secondary Accession #	Q14291; Q8IYN9; Q9UD85; B4E2N6; F5H4S4; J3QT16
UniProt Related Accession #	Q05397
NCBI Official Full Name	Focal adhesion kinase 1
NCBI Official Synonym Full Names	protein tyrosine kinase 2
NCBI Official Symbol	PTK2
NCBI Official Synonym Symbols	FAK; FADK; FAK1; FRNK; PPP1R71; p125FAK; pp125FAK
UniProt Protein Name	Focal adhesion kinase 1
UniProt Synonym Protein Names	Focal adhesion kinase-related nonkinase; FRNK; Protein phosphatase 1 regulatory subunit 71; PPP1R71; Protein-tyrosine kinase 2; p125FAK; pp125FAK
Protein Family	Focal adhesion kinase
UniProt Gene Name	PTK2
UniProt Synonym Gene Names	FAK; FAK1; FADK 1; FRNK; PPP1R71
UniProt Entry Name	FAK1_HUMAN
NCBI Protein Information	focal adhesion kinase 1
NCBI Summary for PTK2	This gene encodes a cytoplasmic protein tyrosine kinase which is found concentrated in the focal adhesions that form between cells growing in the presence of extracellular matrix constituents. The encoded protein is a member of the FAK subfamily of protein tyrosine kinases but lacks significant sequence similarity to kinases from other subfamilies. Activation of this gene may be an important early step in cell growth and intracellular signal transduction pathways triggered in response to certain neural peptides or to cell interactions with the extracellular matrix. Several transcript variants encoding different isoforms have been found for this gene, but the full-length natures of only four of them have been determined. [provided by RefSeq, Oct 2015]

UniProt Comments for PTK2	FAK: a tyrosine kinase of the FAK family required for cell migration and contact-dependent survival signaling. Activated by tyrosine-phosphorylation in response to either integrin clustering induced by cell adhesion or antibody cross-linking, or via G-protein coupled receptor (GPCR) occupancy by ligands such as bombesin or lysophosphatidic acid, or via LDL receptor occupancy. Downstream of integrins and Src, upstream of Ras/MAPK. Localizes to focal adhesions that form between cells growing in the presence of extracellular matrix constituents. Interacts with CAS family members and with GIT1, SORBS1 and BCAR3. Interacts with Shb. Required for full Ras transformation of fibroblasts. Increased expression in breast and other cancers, related to chromosome 8q amplification. Overexpression and activation associated with increased migration, invasion and progression of ovarian cancer, and with progression in hepatocellular carcinoma, thyroid cancer, and acute myelogenous leukemia. siRNA increases chemosensitivity of pancreatic adenocarcinoma xenografts. Inhibitor: ISI15421 (antisense). Four splice-variant isoforms have been observed. Protein type: Kinase, protein; Protein kinase, TK; EC 2.7.10.2; Protein kinase, tyrosine (non-receptor); TK group; Fak family Chromosomal Location of Human Ortholog: 8q24.3 Cellular Component: cytoplasm; cytoskeleton; cytosol; extrinsic to internal side of plasma membrane; focal adhesion; nucleus; plasma membrane; stress fiber Molecular Function: actin binding; JUN kinase binding; non-membrane spanning protein tyrosine kinase activity; protein binding; protein kinase activity; protein kinase binding; protein-tyrosine kinase activity; Ras guanyl-nucleotide exchange factor activity; receptor binding; SH2 domain binding Biological Process: angiogenesis; axon guidance; cell motility involved in cell locomotion; cell structure disassembly during apoptosis; embryonic development; ephrin receptor signaling pathway; epidermal growth factor receptor signaling pathway; establishment of cell polarity; heart morphogenesis; innate immune response; integrin-mediated signaling pathway; MAPKKK cascade; negative regulation of apoptosis; negative regulation of cell-cell adhesion; peptidyl-tyrosine phosphorylation; placenta development; positive regulation of cell migration; positive regulation of cell proliferation; positive regulation of phosphoinositide 3-kinase activity; positive regulation of phosphoinositide 3-kinase cascade; positive regulation of protein amino acid phosphorylation; positive regulation of protein kinase activity; positive regulation of protein kinase B signaling cascade; protein amino acid autophosphorylation; regulation of cell adhesion mediated by integrin; regulation of cell proliferation; regulation of cell shape; regulation of cytoskeleton organization and biogenesis; regulation of focal adhesion formation; regulation of GTPase activity; regulation of osteoblast differentiation; regulation of protein amino acid phosphorylation; transforming growth factor beta receptor signaling pathway; vascular endothelial growth factor receptor signaling pathway
Research Articles on PTK2	**1.** Modulation of FAK and Src adhesion signaling occurs independently of adhesion complex composition.
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