

Product datasheet for **MC222867**

Ptk2b (NM_172498) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Ptk2b (NM_172498) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Ptk2b
Synonyms:	CADTK; CAKB; CAKbeta; E430023O05Rik; FADK2; FAK2; PYK2; Raftk
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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Fully Sequenced ORF:

>MC222867 representing NM_172498
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGTCGGGGTGTCTGAGCCCTTGAAGCTGTAAAAGTGGGCACTTTACGCCGGCTGAGGGCCCCCAG
 AGCCCATGGTGGTGTACCAAGTGGATGTGGAGAAGGAAGACGTGCGCATCCTCAAGTCTGCTTCTACAG
 CAACAGCTTCAACCCAGGGAAGAACTTCAAGCTTGTCAAATGCACAGTGCAGACAGAGATCCAGGAGATC
 ATCACCTCCATCCTCCTGAGTGGGCAATAGGGCCCAACATCCAGCTGGTGAATGCTATGGGCTGAGGC
 TGAAGCAGATGAAGTGCAGCAGATCCACTGGCTGCACCCACAGATGACCGTGGGCGAAGTGCAGGACAA
 GTATGAATGTCTACAGTGAAGCTGAGTGGAGGTATGACCTTCAAATCCGCTACTTGCCGGAAGACTTC
 ATGGAGAGCCTGAAAGAAGACAGGACCACATTGCTGTACTTTTATCAACAGCTCCGGAATGACTACATGC
 AACGCTACGCCAGCAAGGTCAGTGAAGGCATGGCTCTGCAGCTGGGCTGTCTGGAGCTCAGGAGATTCTT
 CAAGGACATGCCCAATGCAGTGGACAAAAAGTCCAACCTTGAAGTCTGGAAAAAGAAGTCCGCTCTG
 GACCTGTTTTTCCAAAGCAGATGCAGGAAAACTTAAAGCCCAAGCAGTTCGGAAAGATGATCCAGCAGA
 CCTTCCAGCAGTATGCATCACTCCGGGAGGAAGAGTGTGTGCATGAAATCTTCAATACCTAGCGGGCTT
 TGCCAACATTGACCAGGAGACCTACCGCTGCGAACTCATTCAAGGATGGAACATTACTGTGGACCTGGTC
 ATCGGCCCTAAAGGCATCCGTCAGCTGACAAGTCAAGATACAAAGCCACCTGCCTGGCCGAGTTTAAAGC
 AGATCAAATCCATCAGGTGCCTCCCATTTGGAAGAGACCCAGGCAGTCTGCAGCTGGGCATCGAGGGTGC
 CCCCCAGTCTTGTCTATCAAACGTCGTCCTGGCAGAGGCTGAGAACATGGCTGACCTCATAGATGGC
 TACTGCAGGCTGCAAGGAGAACAATAAGGGCTCTCTCATCATGCATGCCAAGAAAGATGGTGAAGAGGA
 ACAGCTGCCTCAGATCCCCACACTAAACCTGGAGGCTCGCGGTCGCACCTCTCAGAAAGCTGCAGCAT
 AGAGTCAGACATCTATGCGGAGATTCCCGATGAGACCCTGCGAAGACCAGGAGGTCACAGTACGGTGT
 GCCCGTGAAGAAGTAGTTCTTAACCGCATTCTGGGTGAAGGCTTCTTTGGGGAGGTCTATGAAGGTGTCT
 ACACGAACCACAAAGGGGAAAAAATTAATGTGGCCGTCAAGACCTGTAAGAAAGACTGTACCCAGGACAA
 CAAGGAGAAGTTCATGAGTGAAGCAGTGCATGAAGAATCTTGACCACCTCACATCGTGAAGCTGATT
 GGCATCATTGAAGAGGAACCCACCTGGATTATCATGGAAGTGTATCCTTATGGGGAGCTGGGACACTACC
 TGGAAACGAAATAAAAACCTCCTGAAGGTACCCACTCTGGTCTGTACACCCTACAGATATGCAAAGCCAT
 GGCCTATCTGGAGAGCATCAACTGTGTGCACAGGGATATTGCTGTCCGGAACATCCTGGTGCCTCTCCT
 GAGTGTGTGAAGCTGGGGGACTTTGGGCTCTCCCGGTACATTGAGGACGAAGACTATTACAAAGCCTCTG
 TGACCCGCTACCCATCAAATGGATGTCCCCCGAGTCCATCAACTTCCGCGCTTACAACCGCCAGTGA
 TGCTGGATGTTTGTGTATGCATGTGGGAGATCCTCAGCTTTGGGAAGCAGCCTTTCTTCTGGCTCGAA
 AATAAGGATGTATCGGAGTGTGGAGAAAGGGGACAGGCTGCCAAGCCGAACTCTGTCCGCCTGTCC
 TTTACACACTCATGACTCGTGTGGGACTACGACCCAGTGACCGGCCCGCTTACGGAGCTTGTGTG
 CAGCCTCAGTGACATTTATCAGATGGAGAAGGACATTGCCATAGAGCAAGAAAGGAATGCTCGTACCGA
 CCCCCAAAATATTGGAGCCTACTACCTTTCAGGAACCCCAAGCCAGCCGGCCCAAGTACAGAC
 CTCCTCCACAGACCAACCTGCTGGCTCCTAAGCTGCAGTTCAGGAGGAGGACTTCATCCGGCCAGTAG
 CCGAGAAGAGGCCAGCAGCTCTGGGAGGCAGAGAAGATCAAGATGAAGCAGGTCCTAGAAGACAGCAG
 AAGCAGATGGTGAAGATTCCAGTGGCTGAGGGCAGAGGAAAGATGCTTGGACCTATAGTTTATATGA
 ATGACAAGTCCCCACTGACTCCAGAGAAGGAGCCGGCTACACGGAGTTCACAGGGCCCCACAGAAACC
 ACCTCGGCTCGGTGCACAGTCCATTAGCCACAGCCAACCTGGACAGGACCGATGACCTCGTGTACCAC
 AATGTCATGACCTGGTGGAGGCTGTGTGGAAGTCAAGAACAAGCTTGGCCAGTTGCCCTGAGGACT
 ATGTGGTGGTGGTGAAGAAGCTGGGGCTGAACCTGCGGAAGCTCATCGGCAGTGTGGACGATCTCTTGC
 CTCCTTCCGGCATCTTCGAGGACAGAGATTGAAGGGACCCAGAACTGCTCAACAAAGACCTGGCAGAG
 CTCATCAACAAGATGAAGTTGGCTCAGCAGAACCCGTGACGTCCTGAGTGAAGGACTGCAAGCGCAG
 TGCTCACAGCGTCCCATACCTGGCTGTGGATGCCAAGAAGCTGTGGATGCTGTGGACCAAGCCAAGGT
 TGTGGCTAATCTGGCCACCCGCTGCAGAG**TGA**

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites:	Sgfl-Mlul
ACCN:	NM_172498
Insert Size:	2904 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	<u>NM_172498.3</u> , <u>NP_766086.2</u>
RefSeq Size:	3925 bp
RefSeq ORF:	2904 bp
Locus ID:	19229
Cytogenetics:	14 34.36 cM

Gene Summary:

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).

[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (3) lacks an alternate in-frame exon compared to variant 1. This results in a shorter protein (isoform 3) compared to isoform 1.