

Product datasheet for MR226798

Ptk2b (NM_001162365) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Ptk2b (NM_001162365) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Ptk2b
Synonyms:	CADTK; CAKB; CAKbeta; E430023O05Rik; FADK2; FAK2; PYK2; Raftk
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>MR226798 representing NM_001162365 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGTCCGGGTGTCTGAGCCCTGAGCCGTGTAAAAGTGGGCACTTTACGCCGGCTGAGGGCCCCCAG
AGCCCATGGTGGTACCAGTGGATGTGGAGAAGGAAGCGTGCATCCTCAAGTCTGCTTCTACAG
CAACAGCTTCAACCCAGGAAGAAGTCAAGCTTGTCAAATGCACAGTGCAGACAGATCCAGGAGATC
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CCCCAGTCTTGTCTATCAAAACGTCGTCCTGGCAGAGGCTGAGAACATGGCTGACCTCATAGATGGC
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TGGAACGAAATAAAAACCTCCCTGAAGGTACCCACTCTGGTCTGTACACCCTACAGATATGCAAAGCCAT
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 CAGAG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGAT AAGTTTAA

Protein Sequence:

>MR226798 representing NM_001162365
 Red=Cloning site Green=Tags(s)

MSGVSEPLSRVKVGLRRPEGPPEPMVVVVDVEKEDVRIILKVCFYNSFNPKNFKLKCTVQTEIQEI
 ITSILLSGRIGPNIQLAECYGLRLKHKMSDEIHWLHPQMTVGEVQDKYECLHVEAEWRYDLQIRYLPEDF
 MESLKEDRTLLLYFYQQLRNDYMQRYASKVSEGMALQLGCLELRRFFKDMPHNALDKSNFELLEKEVGL
 DLFFPKMQENLKPQFRKMIQQTFQYASLREEECVMKFFNTLAGFANIDQETYRCELIQGWNITVDLV
 IGPKGIRQLTSQDTKPTCLAEFKQIKSIRCLPLEETQAVLQLGIEGAPQSLSIKTSSLAEENMADLIDG
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 AREEVVLRILGEGFFGEVYEGVYTNHKGEKINVAVKTCCKDCTQDNKEKFMSEAVIMKNLDHPHIVKLI
 GIIEEPTWIIMELYPYGELGHYLERNKNSLKVPTLVLYTLQICKAMAYLESINCVHRDIAVRNIVASP
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 LNLRLKIGSVDDLLPSLPASSRTEIEGTQKLLNKDLAELINKMKLAQQNAVTSLEDCKRQMLTASHTLA
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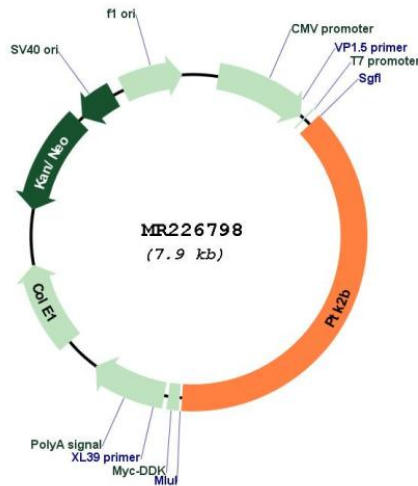
Restriction Sites:

Sgfl-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_001162365

ORF Size: 3015 bp

OTI Disclaimer:

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
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_001162365.1</u> , <u>NP_001155837.1</u>
RefSeq Size:	4039 bp
RefSeq ORF:	3018 bp
Locus ID:	19229
Cytogenetics:	14 34.36 cM
MW:	115.9 kDa

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]