

## Product datasheet for **MR227190**

### **Ptk2 (NM\_001130409) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Ptk2 (NM_001130409) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Ptk2
Synonyms:	Fadk; FAK; FRNK; mKIAA4203; p125FAK
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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ORF Nucleotide Sequence:

>MR227190 representing NM\_001130409  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCCCGCATCGCC

ATGGCAGCTGCTTATCTTGACCCAACTTGAATCACACACCAAGTTCGAGTACTAAGACTCACCTGGGTA  
 CTGGCATGGAACGGTCCCCTGGTCAATGGAACGAGTATTAAAGTCTTTTCATTATTTTGAAGCAGTAG  
 TGAGCCAACACCTGGGCCAGTATTATCAGGCATGGAGATGCTACTGATGTCAGGGGCATCATTCAGAAG  
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ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR227190 representing NM\_001130409  
 Red=Cloning site Green=Tags(s)

MAAAYLDPNLNHTPSSSTKTHLGTGMERSPGAMERVLKVFHYFESSSEPTTASIIIRHG DATDVRGIIQK  
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 KPTLNFFYQQVKSDYMQE IADQVDQEIALKLGCLEIRRSYWEMRGNAL EKKSNEYVLEKDVGLKRF FPKS  
 LLD SVKAKTLRKL IQQTFRQFANLNREESILKFF EILSPVYRFDKECFKALGSSWII SVELAIGPEEGI  
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 VNGATQSF IIRPQKEGERALPSIPKLANSEKQGMRTHAVSVSETDDYAEI IDEEDTYTMPSTRDYEIQRE  
 RIELGRCIGEGQFGDVHQGVYLS PENPALAVA IKTCKNCTSDSVREKFLQEAL TMRQFDHPHIVKLI GVI  
 TENPVWIIMELCTLGELRSFLQVRKYSLDL ASLILYAYQLSTALAYLESKRFVHRDIAARNVLVSSNDCV  
 KLGD FGLSRYMEDSTYYKASKGKLP IKWMAPESINFRRTSASDVWVMFGVCMWEILMHGVKPFQGVKNND  
 VIGRIENGERLMPPPNCPTLYSLMTKCWAYDPSRRPRFTELKAQLSTILEEEKVQQEERM RMESRRQAT  
 VSWDSGGSD EAPPKPSRPGYSPRSSEGF YSPQH MVQTNHYQVSGYPGSHGIPAMAGSIYQGQASLLDQ  
 TELWNHRPQEMSMWQPSVEDSAALDLRGMGOVL PPHLMEERLIRQQQEMEEDQRWLEKEERFLKPDVRLS  
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 MWSVPC

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

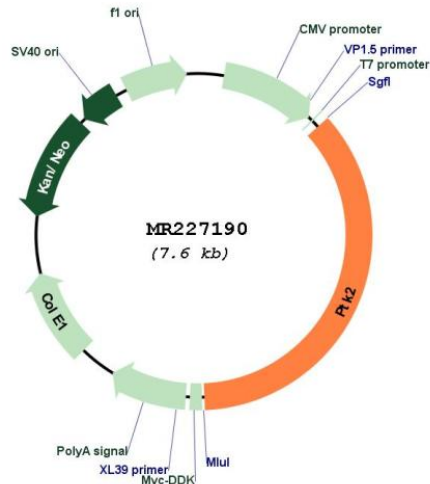
Restriction Sites:

SgfI-MluI

Cloning Scheme:



## Plasmid Map:



ACCN: NM\_001130409

ORF Size: 2748 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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:**

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: [NM\\_001130409.1](#), [NP\\_001123881.1](#)

RefSeq Size: 3598 bp

RefSeq ORF: 2751 bp

Locus ID: 14083

UniProt ID: [P34152](#)

Cytogenetics: 15 33.94 cM

MW: 104.5 kDa

**Gene Summary:** 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 9 (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 (By similarity).[UniProtKB/Swiss-Prot Function]