

Product datasheet for **RG205372**

PYK2 (PTK2B) (NM_173174) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	PYK2 (PTK2B) (NM_173174) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	PYK2
Synonyms:	CADTK; CAKB; FADK2; FAK2; PKB; PTK; PYK2; RAFTK
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG205372 representing NM_173174 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGTCGGGGTGTCCGAGCCCCTGAGTCGAGTAAAGTTGGGCACGTTACGCCGCCTGAAGGCCCTGCAG
AGCCCATGGTGGTGTACCAGTAGATGTGGAAAAGGAGGACGTGCGTATCCTCAAGGTCTGCTTCTATAG
CAACAGCTTCAATCCTGGGAAAACTTCAAAGTGGTCAAATGCACTGTCCAGACGGAGATCCGGGAGATC
ATCACCTCATCCTGCTGAGCGGGCGGATCGGGCCCAACATCCGTTGGTGTGAGTCTATGGCTGAGGC
TGAAGCACATGAAGTCCGATGAGATCCACTGGCTGCACCCACAGATGACAGTGGGTGAGGTGCAGGACAA
GTATGAGTGTCTGCACGTGGAAGCCGAGTGGAGGTATGACCTTCAAATCCGCTACTTGCCAGAAGACTTC
ATGGAGAGCCTGAAGGAGGACAGGACCAGCTGCTCTATTTTTACCAACAGCTCCGGAACGACTACATGC
AGCGCTACGCCAGCAAGGTGAGCGAGGGCATGGCCCTGCAGCTGGGCTGCCTGGAGCTCAGGCGGTTCTT
CAAGGATATGCCCCAATGCACTTGACAAGAAGTCCAATTCGAGCTCCTAGAAAAGGAAGTGGGGCTG
GACTTGTTTTTCCCAAAGCAGATGCAGGAGAAGTAAAGCCAAACAGTTCGGAAGATGATCCAGCAGA
CCTTCCAGCAGTACGCCCTCGCTCAGGGAGGAGGAGTGCATGAAGTCTTCAACTCTCGCCGGCTT
CGCCAACATCGACCAGGAGACCTACCGCTGTGAAGTCAATCAAGGATGGAACATTACTGTGGACCTGGTC
ATTGGCCCTAAAGGGATCCGCCAGCTGACTAGTCAGGACGCAAAGCCACCTGGCCGAGTTCAAGC
AGATCAGGTCCATCAGGTGCCTCCCGCTGGAGGAGGGCCAGGCAGTACTTCAGCTGGGCATTGAAGGTGC
CCCCAGGCCCTTGTCATCAAAACCTCATCCCTAGCAGAGGCTGAGAACATGGCTGACCTCATAGACGGC
TACTGCCGGCTGCAGGCTGAGCACCAAGGCTCTCTCATCATCCATCCTAGGAAAGATGGTGAAGAAGCGGA
ACAGCCTGCCAGATCCCCATGCTAAACCTGGAGGCCCGCGGTCCCACCTCTCAGAGAGCTGCAGCAT
AGAGTCAGACATCTACGCAGAGATTCCCGACGAAACCTGCGAAGGCCCGGAGGTCCACAGTATGGCATT
GCCCGTGAAGATGTGGTCTGAATCGTATTCTTGGGGAAGGCTTTTTTGGGGAGGCTATGAAGGTGTCT
ACACAAATCATAAAGGGAGAAAATCAATGTAGCTGTCAAGACCTGCAAGAAAGACTGCACTCTGGACAA
CAAGGAGAAGTTCATGAGCGAGGACGTGATCATGAAGAACCTCGACCACCGCACATCGTGAAGCTGATC



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GGCATCATTGAAGAGGAGCCACCTGGATCATCATGGAATTGTATCCCTATGGGGAGCTGGGCCACTACC
 TGGAGCGGAACAAGAAGCTCCCTGAAGGTGCTCACCTCGTGTACTACTGCAGATATGCAAAGCCAT
 GGCCTACCTGGAGAGCATCAACTGCGTGACAGGGACATTGCTGTCCGGAACATCCTGGTGGCCTCCCCT
 GAGTGTGTGAAGCTGGGGGACTTTGGTCTTTCCCGGTACATTGAGGACGAGGACTATTACAAAGCCTCTG
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 TTTATACCCTCATGACCCGCTGCTGGGACTACGACCCAGTGACCGGCCCGCTTACCAGCTGGTGTG
 CAGCCTCAGTGACGTTTATCAGATGGAGAAGGACATTGCCATGGAGCAAGAGAGGAATGCTCGTACCGA
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 TCCTACGCTCACCAGCCCTATGGAGTATCCATCTCCCGTAACTACTGCACACCCACCTCTCCACCGG
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 AGCAGCTGTGGGAGGCTAAAAGGTCAAATGCGGCAAATCCTGGACAAACAGCAGAAGCAGATGGTGA
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 CACAGTCCATCCAGCCCACAGCTAACCTGGACCGACCGATGACCTGGTGTACCTCAATGTCATGGAGCT
 GGTGCGGGCCGTGCTGGAGCTCAAGATGAGCTCTGTCAGCTGCCCCCGAGGGCTACGTGGTGGTGGT
 AAGAATGTGGGGCTGACCTGCGGAAGCTCATCGGGAGCGTGGATGATCTCCTGCCTTCTTGCCGTCAT
 CTTACGGACAGAGATCGAGGGCACCCAGAAATGCTCAACAAAGACCTGGCAGAGCTCATCAACAAGAT
 GCGGCTGGCGCAGCAGAACGCCGTGACCTCCCTGAGTGAAGAGTGAAGAGGCAGATGCTGACGGCTTCA
 CACCCCTGGCTATGGACGCCAAGAACCTGCTCGACGCTGTGGACCAGGCCAAGGTTCTGGCCAATCTGG
 CCCACCCACCTGCAGAG

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>RG205372 representing NM_173174
 Red=Cloning site Green=Tags(s)

MSGVSEPLSRVKLGLTLLRPEGPAEPMVVVVDVEKEDVRIKVKCFYSNSFNPKNFKLKCTVQTEIREI
 ITSILLSGRIGPNIRLAECYGLRLKHKMSDEIHWLHPQMTVGEVQDKYECLHVEAEWRYDLQIRYLPEDF
 MESLKEDRTLLLYFYQQLRNDYMQRYASKVSEGMALQLGCLELRRFFKDMPHNALDKSNFELLEKEVGL
 DLFFPKMQENLKPQFRKMIQQTFQYASLREEECVMKFFNTLAGFANIDQETYRCELIQGWNITVDLV
 IGPKGIRQLTSQDAKPTCLAEFKQIRSIKPLLEEGQAVLQLGIEGAPQALSIKTSLLAEENMADLIDG
 YCRLQGEHQGSLIIHPRKDGEKRNSLPQIPMLNLEARRSHLSESCSIESDIYAEIPDETLRRPGGPQYGI
 AREDVVLNRILGEGFFGEVYEGVYTNHKGEKINVAVKTCCKDCTLDNKEKFMSEAVIMKNLDHPHIVKLI
 GIIEEPTWIIIMELYPYGELGHYLERKNLSLKVLTLLVLSLQICKAMAYLESINCVHRDIAVRNIVAS
 PVEVKGDFGLSRYIEDEYYKASVTRLPIKWMSPESINFRFTTASDVVMFAVCMWEILSFGKQPFVWLE
 NKDVIQVLEKGDRLPKPDLCPVLYLMTRCWDYDPSDRPRFTELVCSLSDVYQMEKDIAMEQERNARYR
 TPKILEPTAFQEPKPSRPKYRPPQTNLLAPKLQFQVPEGLCASSPTLTSPMEYPSVNSLHTPPLHR
 HNVFKRHSREEDFIQSSREEAQLWEAEKVKMRQILDKQKQMVEDYQWLRQEEKSLDPMVYMNDKSP
 LTPEKEVGYLEFTGPPQKPPRLGAQSIQPTANLDRDLDLVLNVMELVRAVLELKNELCQLPPEGYVVV
 KNVGLTLRKLIGSVDDLPSLPSSSRTEIEGTQKLLNKDLAELINKMRLAQQNAVTSLSSECKRQMLTAS
 HTLAMDAKNLLDAVDQAVLANLAHPPAE

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-MluI

Cloning Scheme:



ACCN: NM_173174

ORF Size: 3027 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 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_173174.1](#), [NP_775266.1](#)

RefSeq Size: 4715 bp

RefSeq ORF: 3030 bp

Locus ID: 2185

UniProt ID: [Q14289](#)

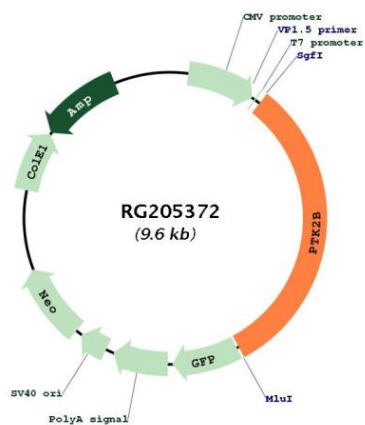
Cytogenetics: 8p21.2

Protein Families: Druggable Genome, Protein Kinase

Protein Pathways: Calcium signaling pathway, Chemokine signaling pathway, GnRH signaling pathway, Leukocyte transendothelial migration, Natural killer cell mediated cytotoxicity

Gene Summary: This gene encodes a cytoplasmic protein tyrosine kinase which is involved in calcium-induced regulation of ion channels and activation of the map kinase signaling pathway. The encoded protein may represent an important signaling intermediate between neuropeptide-activated receptors or neurotransmitters that increase calcium flux and the downstream signals that regulate neuronal activity. The encoded protein undergoes rapid tyrosine phosphorylation and activation in response to increases in the intracellular calcium concentration, nicotinic acetylcholine receptor activation, membrane depolarization, or protein kinase C activation. This protein has been shown to bind CRK-associated substrate, nephrocystin, GTPase regulator associated with FAK, and the SH2 domain of GRB2. The encoded protein is a member of the FAK subfamily of protein tyrosine kinases but lacks significant sequence similarity to kinases from other subfamilies. Four transcript variants encoding two different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]

Product images:



Circular map for RG205372