

## Product datasheet for **RC206746**

### **PDPK1 (NM\_031268) Human Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	PDPK1 (NM_031268) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	PDPK1
Synonyms:	PDK1; PDPK2; PDPK2P; PRO0461
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide  
Sequence:

>RC206746 ORF sequence  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCCGCGATCGCC

ATGGCCAGGACCACCAGCCAGCTGTATGACGCCGTGCCATCCAGTCCAGCGTGGTGTATGTTCTGCC  
CATCCCCATCAATGGTGAGGACCCAGACTGAGTCCAGCAGCCCCCTGGATTCTGGTGGCAGCAGGCA  
GGGCCCCGCCATGGACGGCACTGCAGCCGAGCCTCGGCCCGGCGCCGGCTCCCTGCAGCATGCCAGCCT  
CCGCCGCAGCCTCGGAAGAAGCGGCTGAGGACTTCAAGTTTGGGAAAATCCTTGGGGAAGGCTCTTTT  
CCACGGTTGTCCTGGCTCGAGAAGTGGCAACCTCCAGAGAATATGCGACCAGGGCCAACCTCATTGTTGG  
AACAGCGCAGTACGTTTCCAGAGCTGCTCACGGAGAAGTCCGCCTGTAAGAGTTCAGACCTTTGGGCT  
CTTGGATGCATAATATACCAGCTTGTGGCAGGACTCCACCATTCCGAGCTGGAAACGAGTATCTTATAT  
TTCAGAAGATCATTAAAGTTGGAATATGACTTTCCAGAAAAATTCTCCCTAAGGCAAGAGACCTCGTGG  
GAAACTTTTGGTTTTAGATGCCACAAAGCGGTTAGGCTGTGAGGAAATGGAAGGATACGGACCTCTAAA  
GCACACCCGTTCTTCGAGTCCGTACGTCGGGAGAACCTGCACCAGCAGACGCCTCCGAAGCTCACCGCTT  
ACCTGCCGGCTATGTCGGAAGACGACGAGGACTGCTATGGCAATTATGACAATCTCCTGAGCCAGTTTGG  
CTGCATGCAGGTGCTTCGTCCTCCTCACACTCCCTGTCAGCCTCCGACACGGGCTGCCCCAGAGG  
TCAGGCAGCAACATAGAGCAGTACATTCACGATCTGGACTCGAATCCTTTGAACTGGACTTACAGTTTT  
CCGAAGATGAGAAGAGGTTGTTGTTGGAGAAGCAGGCTGGCGGAAACCTTGGCACCAGTTTGTAGAAAA  
TAATTTAATACTAAAGATGGGCCAGTGGATAAGCGGAAGGTTTATTTGCAAGACGACGACAGCTGTTG  
CTCACAGAAGGACCACATTTATATTATGTGGATCCTGTCAACAAAGTTCTGAAAGGTGAAATTCCTTGGT  
CACAGAAGTTCGACCAGAGCCAAGAATTTTAAAACTTTCTTTGTCCACACGCCTAACAGGACGTATTA  
TCTGATGGACCCAGCGGGAACGCACCAAGTGGTGCAGGAAGATCCAGGAGTTTGGAGGCAGCGATAC  
CAGAGCCACCCGACGCCGCTGTGCAG

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

## Protein Sequence:

>RC206746 protein sequence  
Red=Cloning site Green=Tags(s)

MARTTSQLYDAVPIQSSVVLCSPPSPSMVRTQTESSTPPGIPGGSRQGPAMDGTAAEPRPGAGSLQHAQP  
PPQPRKKRPEDFKFGKILGEGSFSTVVLARELATSREYATRANFVGTQYVSPELLTEKSACKSSDLWA  
LGCIIYQLVAGLPPFRAGNEYLIFQKIIKLEYDFPEKFFPKARDLVEKLLVLDATKRLGCEEMEGYGLK  
AHPFFESVTWENLHQTPPKLTAYLPAMSEDDCYGNYDNLLSQFGCMQVSSSSSHSLASDTGLPQR  
SGSNIEQYIHDLDSNSFELDLQFSEDEKRLLEKQAGGNPWHQFVENNLILKMGPVDKRGLFARRRQLL  
LTEGPHLYYVDPVNVKVLKGEIPWSQELRPEAKNFKTFVHTPNRTYYLMDPSGNAHKWCRKIQEVWRQRY  
QSHPDAAVQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

## Chromatograms:

[https://cdn.origene.com/chromatograms/mk6519\\_h01.zip](https://cdn.origene.com/chromatograms/mk6519_h01.zip)

## Restriction Sites:

SgfI-MluI

**Cloning Scheme:**


**ACCN:** NM\_031268

**ORF Size:** 1287 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:**

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\\_031268.6](#)

**RefSeq Size:** 6862 bp

**RefSeq ORF:** 1290 bp

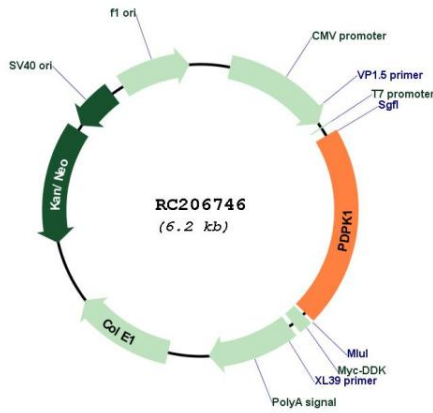
**Locus ID:** 5170

**UniProt ID:** [O15530](#)

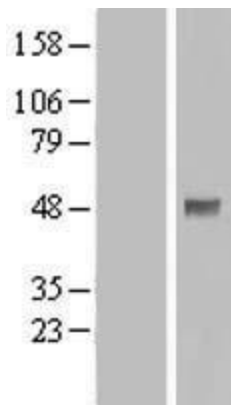
**Cytogenetics:** 16p13.3

<b>Protein Families:</b>	Druggable Genome, Protein Kinase
<b>Protein Pathways:</b>	Endometrial cancer, Focal adhesion, Insulin signaling pathway, mTOR signaling pathway, Non-small cell lung cancer, PPAR signaling pathway, Prostate cancer
<b>MW:</b>	48.2 kDa
<b>Gene Summary:</b>	<p>Serine/threonine kinase which acts as a master kinase, phosphorylating and activating a subgroup of the AGC family of protein kinases. Its targets include: protein kinase B (PKB/AKT1, PKB/AKT2, PKB/AKT3), p70 ribosomal protein S6 kinase (RPS6KB1), p90 ribosomal protein S6 kinase (RPS6KA1, RPS6KA2 and RPS6KA3), cyclic AMP-dependent protein kinase (PRKACA), protein kinase C (PRKCD and PRKCZ), serum and glucocorticoid-inducible kinase (SGK1, SGK2 and SGK3), p21-activated kinase-1 (PAK1), protein kinase PKN (PKN1 and PKN2). Plays a central role in the transduction of signals from insulin by providing the activating phosphorylation to PKB/AKT1, thus propagating the signal to downstream targets controlling cell proliferation and survival, as well as glucose and amino acid uptake and storage. Negatively regulates the TGF-beta-induced signaling by: modulating the association of SMAD3 and SMAD7 with TGF-beta receptor, phosphorylating SMAD2, SMAD3, SMAD4 and SMAD7, preventing the nuclear translocation of SMAD3 and SMAD4 and the translocation of SMAD7 from the nucleus to the cytoplasm in response to TGF-beta. Activates PPARG transcriptional activity and promotes adipocyte differentiation. Activates the NF-kappa-B pathway via phosphorylation of IKKB. The tyrosine phosphorylated form is crucial for the regulation of focal adhesions by angiotensin II. Controls proliferation, survival, and growth of developing pancreatic cells. Participates in the regulation of Ca(2+) entry and Ca(2+)-activated K(+) channels of mast cells. Essential for the motility of vascular endothelial cells (ECs) and is involved in the regulation of their chemotaxis. Plays a critical role in cardiac homeostasis by serving as a dual effector for cell survival and beta-adrenergic response. Plays an important role during thymocyte development by regulating the expression of key nutrient receptors on the surface of pre-T cells and mediating Notch-induced cell growth and proliferative responses. Provides negative feedback inhibition to toll-like receptor-mediated NF-kappa-B activation in macrophages. Isoform 3 is catalytically inactive.[UniProtKB/Swiss-Prot Function]</p>

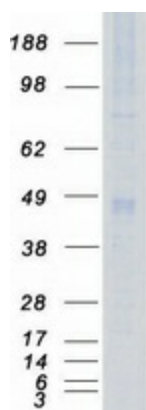
Product images:



Circular map for RC206746



Western blot validation of overexpression lysate (Cat# [LY410607]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC206746 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified PDPK1 protein (Cat# [TP306746]). The protein was produced from HEK293T cells transfected with PDPK1 cDNA clone (Cat# RC206746) using MegaTran 2.0 (Cat# [TT210002]).