

Product datasheet for **SC111072**

PIP5K1 alpha (PIP5K1A) (NM_003557) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	PIP5K1 alpha (PIP5K1A) (NM_003557) Human Untagged Clone
Tag:	Tag Free
Symbol:	PIP5K1 alpha
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >OriGene ORF within SC111072 sequence for NM_003557 edited (data generated by NextGen Sequencing)

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ATGGCGTCGGCCTCCTCCGGGCCGTCGTCTTCGGTCGGTTTTTCATCCTTTGATCCCGCG
GTCCCTTCTGTACCTTGTCTCAGCATCTGGAATCAAGAGACCCATGGCATCTGAGGTG
CCTTATGCCTCTGGCATGCCATCAAGAAAATAGGCCATAGAAGTGTGATTCTCAGGA
GAGACAACATATAAAAAGACAACCTCATCAGCCTTGAAAGGTGCCATCCAGTTAGGCATT
ACCCACACTGTGGGGAGCCTGAGTACCAAACAGAGCGTGATGCCTCATGCAAGATTTT
TACGTGGTTGAGAGTATCTTCTTCCAGTGAAGGGAGCAACCTGACCCCTGCTCATCAC
TACAATGACTTTTCGTTTCAAGACCTATGCACCTGTTGCCTTCCGCTACTTCCGGGAGCTA
TTTGGTATCCGGCCCGATGATTACTTGTATTCCCTCTGCAGTGAGCCGCTGATTGAACTC
TGTAGCTCTGGAGCTAGTGGTCCCTATTCTATGTGTCCAGCGACGATGAGTTCATTATT
AAGACAGTCCAACATAAAGAGGCGGAATTTCTGCAGAAGCTGCTCCAGGATACTACATG
AACCTCAACCAGAACCTCGGACTTTGCTGCCTAAATTCTATGGACTGTACTGTGTGCAG
GCAGGTGGCAAGAACATTCGGATTGTGGTGTGAACAATCTTTTACCAAGATCGTAAAA
ATGCATATCAAAATAGACCTCAAAGGCTCAACCTACAAACGGCGGGCTTCCAGAAAGAG
CGAGAGAAAGCCTCTTCCACATTTAAAGACCTAGACTTCTTACAAGACATCCCTGATGGT
CTTTTTTTGGATGCTGACATGTACAACGCTCTCTGTAAGACCCTGCAGCGTGACTGTTTG
GTGCTGCAGAGCTTCAAGATAATGGATTATAGCCTCTTGATGTCAATCCATAATATAGAT
CATGCACAACGAGAGCCCTTAAGCAGTGAACACAGTACTCAGTTGATACTCGAAGACCG
GCCCCCAAAAAGGCTCTGATTTCCACAGCCATGGAATCCATCCAGGGAGAGGCTCGACGG
GGTGGTACCATGGAGACTGATGACCATATGGGTGGCATCCCTGCCGGAATAGTAAAGGG
GAAAGGCTTCTGCTTTATATTGGCATCATTGACATTCTACAGTCTTACAGGTTTGTAAAG
AAGTTGGAGCACTTTGGAAAGCCCTGGTACATGACGGAGACACTGTCTCAGTGCATCGC
CCAGGCTTCTACGCTGAACGGTTCCAGCGCTTCAATGTGCAACACAGTATTTAAGAAGATT
CCCTTGAAGCCTTCTCCTTCCAAAAAGTTTCGGTCTGGCTCATCTTTCTCTCGGGAGCA
GGCTCCAGTGGCAACTCCTGCATTACTTACCAGCCATCGGTCTCTGGGGAACACAAGGCA
CAAGTGACAACAAAGGCAGAAGTGGAGCCAGGCGTTACCTTGGTCTGCTGATGTTTTTA
CCTCAGACTCCACCTTTGGAGGAAATCAGTGAGGGCTCGCCTATTCTGACCCAGTTTC
TCACCTCTGGTTGGAGAGACTTTGCAAATGCTAACTACAAGTACAACCTTGGAAAAGCTT
GAAGTTGCAGAGTCAGAGTTCACCCATTA
    
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Clone variation with respect to NM_003557.2
 930 c=>t;1569 a=>g

5' Read Nucleotide Sequence:

>OriGene 5' read for NM_003557 unedited

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GGGGTTCGGGATTTATGTATACGACTACTATAGNNGCGGCCGCAATTTCGGCACCAG
GTTAGGAAGGACGGAGAAGGGCTTCGCTCCTTTGGGACTTTTCATGCCTCGTTTTTTTT
TCAGATGTGGCTTGGTCTGGGCGCAAGTCCCAGCAGCCAGCTTAAGCTTACTCTTCTGT
GAAAGGGGAAAGTATCCCTGTGGAAGCGGTTAACTTGTGGAGGGGTGCGGGACGTG
AGTTCTTCCCATGCCAGGCAATGGTGTGGCCTTGAGCTGGTCCAGGAGCCGGCTCGAC
GTGCTGAGGGAGGCCCGGAGGGGGCGGGAGGTGGCCACAGAACCGGGTTCTGTAA
AGAGACGTTGGGAAGATTCGATTCGAGAAGAGGAAGAACCAGGATTGAAAGAGAGCCAGG
CCGCTGAGGGGGAGGGGGCTGCTAAGATGGCGTCGGCCTCCTCCGGGCCGTCTGCTTCGG
TCGGTTTTTTCATCTTTGATCCCGCGGTCCCTTCTGTACCTTGTCTCAGCATCTGGAA
TCAAGAGACCCATGGCATCTGAGGTGCCTATGCCTCTGGCATGCCATCAAGAAAATAG
GCCATAGAAGTGTGATTCTCAGGAGAGACAACATATAAAAAGACAACCTCATCAGCCT
TGAAGGTTGCCATCCAGTTAGGCATTACCCACACTGTGGGGAGCCTGAGTACCAAACAG
AGCGTGATGTCCTCATGCAAGATTTCTACGTGGTTGAGAGTATCTTCTTCCAGTGAAG
GGAGCAACCTNGACCCTGCTCATCACTACAATGACCTTCCGTTTTCAGGACCTATGCACCT
GTTGCCTTCCGCTACCTCCGGAGCTATTTGGNATCCCGCCCCGAGATTACTTGTATTCCC
TCTGCAGGGAGCCGCTGTATGACTCTGTAACCTGAACTAGGGCTT
    
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3' Read Nucleotide Sequence:	>OriGene 3' read for NM_003557 unedited NGGTAACTGCTATAAGTTTATTACATTAACCTATATCACTTTNTAATTGTATTTGCC ATTTCTGAAACAATACAAAGTAGAGGCAAATAGTAACACTTAATAAAAAATGTTGCTTCCCC ATTCCTTTCCCTAAGACCCAGCCCTCCCTCAAATATTCCTCCACCCCTAACAGAACTC TGTCCCTAATAAAACACTTAAATACATCATAAATAGTAAATTATGAAAAAAAAATAGCAA GAATTCCTTCTCTTGTAAAAAATGCGCAGCAAAGACAGGCAGCCAGAACTGGCTGG GGGTGTCTAATATAGACAGTTATTTGGGGTATGGGCTAACATATTCAAGGCAGGGTGG GATAGAGAAGGGATAGAACAGGAATCAACAATCTGCCTGAGATACCAGGCCCTTCTT CCCCTGACAAGAGTGGAAGGATCAGATGGAAAACCACAACCTTTGTAAACGGGGAGGAGA GGGCATATGTAGCCCCATTTCCAACCTCCCTGCATGAAGACAGGGGGTAGGACATATG GCACAGCAATGACCTCACCAAGGCAAGAATCTGCTGTCTCCCATGAGTTTAAGAAAATA TTTGCTGGCCTCACAGATATGGACTGTCTGTTAAACAGACAGAAGTGTCCCTCTTTAC CTTACCTNCACANACAGGAGAACCCTGGTNGGAAAAGATGAGAAGGAGCAAAACACATC TCCTCTGGAGAAGGACAAAATTCATTTGGGTAGGTCTCACATTTAGAAAACCACCCGGA TATATTTCCAAATGCCAAATATAATAATTACTATAGCCGGGCGTGAACAGGATCTTGC CTGGGAGGGGCTTGACCTCAACCCAGGTTGCCTCCGGTTTACAAAAGGGAAAAGAG AACCCCTGGGCCATTTTTTTTATTCTTAAGCCCTAGAAAAT
Restriction Sites:	NotI-NotI
ACCN:	NM_003557
Insert Size:	4000 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_003557.1</u> , <u>NP_003548.1</u>
RefSeq Size:	3713 bp
RefSeq ORF:	1650 bp
Locus ID:	8394
UniProt ID:	<u>Q99755</u>
Cytogenetics:	1q21.3
Domains:	PIP5K
Protein Families:	Druggable Genome

Protein Pathways:	Endocytosis, Fc gamma R-mediated phagocytosis, Inositol phosphate metabolism, Metabolic pathways, Phosphatidylinositol signaling system, Regulation of actin cytoskeleton
Gene Summary:	<p>Catalyzes the phosphorylation of phosphatidylinositol 4-phosphate (PtdIns4P) to form phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P₂). PtdIns(4,5)P₂ is involved in a variety of cellular processes and is the substrate to form phosphatidylinositol 3,4,5-trisphosphate (PtdIns(3,4,5)P₃), another second messenger. The majority of PtdIns(4,5)P₂ is thought to occur via type I phosphatidylinositol 4-phosphate 5-kinases given the abundance of PtdIns4P. Participates in a variety of cellular processes such as actin cytoskeleton organization, cell adhesion, migration and phagocytosis. Required for membrane ruffling formation, actin organization and focal adhesion formation during directional cell migration by controlling integrin-induced translocation of RAC1 to the plasma membrane. Together with PIP5K1C is required for phagocytosis, but they regulate different types of actin remodeling at sequential steps. Promotes particle ingestion by activating WAS that induces Arp2/3 dependent actin polymerization at the nascent phagocytic cup. Together with PIP5K1B is required after stimulation of G-protein coupled receptors for stable platelet adhesion. Plays a role during calcium-induced keratinocyte differentiation. Recruited to the plasma membrane by the E-cadherin/beta-catenin complex where it provides the substrate PtdIns(4,5)P₂ for the production of PtdIns(3,4,5)P₃, diacylglycerol and inositol 1,4,5-trisphosphate that mobilize internal calcium and drive keratinocyte differentiation. Together with PIP5K1C have a role during embryogenesis. Functions also in the nucleus where acts as an activator of TUT1 adenylyltransferase activity in nuclear speckles, thereby regulating mRNA polyadenylation of a select set of mRNAs (PubMed:18288197, PubMed:19158393, PubMed:20660631). Positively regulates insulin-induced translocation of SLC2A4 to the cell membrane in adipocytes (By similarity).[UniProtKB/Swiss-Prot Function]</p> <p>Transcript Variant: This variant (2) lacks 3 nt at an alternate splice site and an in-frame exon in the CDS, as compared to variant 1. The resulting isoform (2) is shorter but has identical N- and C-termini, as compared to isoform 1.</p>