

## Product datasheet for **SC326023**

### PIP5K1 alpha (PIP5K1A) (NM\_001135636) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	PIP5K1 alpha (PIP5K1A) (NM_001135636) Human Untagged Clone
Tag:	Tag Free
Symbol:	PIP5K1A
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**Fully Sequenced ORF:** >SC326023 representing NM\_001135636.  
 Blue=Insert sequence Red=Cloning site Green=Tag(s)

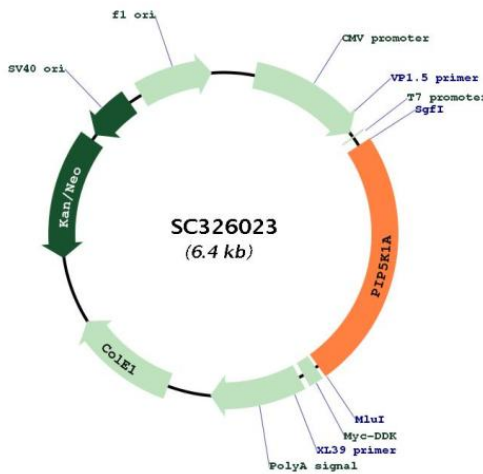
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TCATCAGCCTTGAAGGTGCCATCCAGTTAGGCATTACCCACACTGTGGGAGCCTGAGTACCAAACCA
GAGCGTATGTCCTCATGCAAGATTTCTACGTGGTTGAGAGTATCTTCTTTCCAGTGAAGGGAGCAAC
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TACAAGGATGACGACGATAAGGTTTAAACGGCCGGC
  
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**Restriction Sites:**

SgfI-MluI

**Plasmid Map:**



**ACCN:**

NM\_001135636

<b>Insert Size:</b>	1569 bp
<b>OTI Disclaimer:</b>	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).
<b>OTI Annotation:</b>	This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<u><a href="#">NM_001135636.1</a></u>
<b>RefSeq Size:</b>	3704 bp
<b>RefSeq ORF:</b>	1569 bp
<b>Locus ID:</b>	8394
<b>UniProt ID:</b>	<u><a href="#">Q99755</a></u>
<b>Cytogenetics:</b>	1q21.3
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Endocytosis, Fc gamma R-mediated phagocytosis, Inositol phosphate metabolism, Metabolic pathways, Phosphatidylinositol signaling system, Regulation of actin cytoskeleton
<b>MW:</b>	58.1 kDa

**Gene Summary:**

Catalyzes the phosphorylation of phosphatidylinositol 4-phosphate (PtdIns4P) to form phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P<sub>2</sub>). PtdIns(4,5)P<sub>2</sub> is involved in a variety of cellular processes and is the substrate to form phosphatidylinositol 3,4,5-trisphosphate (PtdIns(3,4,5)P<sub>3</sub>), another second messenger. The majority of PtdIns(4,5)P<sub>2</sub> 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)P<sub>2</sub> for the production of PtdIns(3,4,5)P<sub>3</sub>, 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]

Transcript Variant: This variant (3) lacks two in-frame coding exons, as compared to variant 1. The resulting isoform (3) is shorter but has identical N- and C-termini, as compared to isoform 1.