

Product datasheet for **MG208688**

Pip5k1a (NM_008847) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Pip5k1a (NM_008847) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Pip5k1a
Synonyms:	PI4P5K-I[a]; PIP5K1-alpha; PIP5KIalpha; Pipk5a
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG208688 representing NM_008847
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCGTCCGCTCCTCAGGGCCAGCGGGCCGGGTTTTTCATCCCTTGATGCCGGGCCCTGCTGGTA
 CCGCAGCAGCATCTGGAATCAAGAGAGCCACAGTATCTGAGGGACCTTCGCCTCTGTATCGCTGTAA
 AAAAATAGGCCATCGAAGTGTGATTCTCTGGAGAGACTACATACAAGAAGACAACCTTCATCAGCCTTG
 AAAGGTGCCATCCAGTTAGGCATCACTCACACTGTGGCAGCCTGAGCACCAAACAGAGCGTGTATGTC
 TCATGCAAGACTTCTACGTGGTGGAGAGCATCTTTTTCCAGTGAAGGCAGCAACCTGACACCGGCTCA
 CCATTACAATGACTTTCGATTCAAGACCTATGCGCCTGTTGCCTCCGTTACTTCAGAGAGCTCTTTGGC
 ATCCGGCCTGATGATTACTTGTACTCCCTTTCAGTGAGCCATTGATTGAACTCTCCAATTCTGGAGCTA
 GTGGTTCCTCTCTATGTGTCCAGTGTATGAATTCATTAAGACCGTCCAGCATAAAGAAGCAGA
 ATTTCTGCAGAAGTTGCTTCCAGGATACTACATGAATCTTAACCAAACCTCGTACTTTGCTGCCAAA
 TTTTATGGATTGTACTGTGTGCAAGCAGGCGGCAAGAACATACGAATTGGTGTGAACAATCTCTTGC
 CTCGGTCAGTCAAATGCATATGAAATATGACCTGAAGGGTTCAACTTACAAGCGCGGGCTTCTCAGAA
 AGAACGAGAGAAAACCTCTCCCACTTTAAAGACCTGGACTTCTACAAGATATCCCTGACGGCCTATTT
 TTGGATGCTGACATGTACAGTGTCTGTGTAAGACTCTACAGCGTGACTGTTTGGTGTGCGAGAGCTTCA
 AGATAATGGACTACAGCCTGTTGATGTCCATCCACAACATGGACCATGCACAGAGGGAGCCACGAGCAA
 TGACACACAGTACTCGGCTGACACGCGCAGACCAGCCCCACAGAAGGCGCTCTATTCCACAGCTATGGAA
 TCCATCCAGGGCGAGGCTCGACGGGCGGCACCTGTGGAGACTGAGGACCACATGGGTGCCATCCCTGCC
 GGAATAACAAAGGAGAAAGGCTCCTGCTTATATTGGCATATTGATATCTTTCAGTCTACAGGTTTGT
 TAAGAAGTTGGAGCACTCTTGGAAAGCACTGGTCCATGATGGGGATACGGTGTGAGTGCATCGTCCAGGC
 TTCTATGCTGAGCGGTTCCAGCGTTTCATGTGCAACACAGTGTTCAGAAGATTCCCTTGAAGCCTTCTC
 CTACCAAAAAGTTTCGGTCTGGCCCGTCTTCTCTCGGCGATCAGGCCCCAGCGCAACTCTGCACCTC
 CCAGCTGATGGCCTCTGGGAACACAGAGCACAAGTGACCACCAAGGCGGAAGTGGAGCCAGATGTACAC
 CTTGGGCGTCTGATGTCTTACCTCAGACTCCACCTTTGGAGGAAATAAGTGAGGTTACCTGTTCTCTG
 GCCCCAGTTTCTACCTGTAGTTGGACAACCTTTGCAAATACTAAATTTGAGTTCAACCTTGAAAAGCT
 TGATGTTGCAGAGTCAGAGTTCACCCAC

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>MG208688 representing NM_008847
 Red=Cloning site Green=Tags(s)

MASASSGPAAGFSSLDAGAPAGTAAASGIKRAIVSEGPSASVMPVKKIGHRSVDSSGETTYKKTSSAL
 KGAIQLGITHTVGSLSKPERDVLMDQFYVVEISFFPSEGSNLTPAHHYNDFRFKTYAPVAFRYFRELFG
 IRPDDYLYSLCSEPLIELSNSGASGSLFYVSSDDEFIIKTVQHKEAEFLQKLLPGYYMNLNQNPRLLPK
 FYGLYCVQAGGKNIRIVVMNLLPRSVKMHMKYDLKGYKRRASQKEREKTLPTFKDLDFLQDIPDGLF
 LDADMYSALCKTLQRDCLVLQSFKIMDYSLLMSIHNMDHAQREPTSNDTQYSADTRRPAPQKALYSTAME
 SIQGEARRGGTVETEDHMGGIPARNNGERLLL YIGIIDILQSYRFVKKLEHSHKALVHDGDTVSVHRPG
 FYAERFQRFMCNTVFKKIPLKPSPTKKFRSGPSFSRRSGPSGNSCTSQLMASGEHRAQVTTKAEVEPDVH
 LGRPDVLPQTPPLEEISEGSPVPGPSFSPVVGQPLQILNLSSTLEKLDVAESEFTH

TRTRPLE – GFP Tag – V

Restriction Sites:

Sgfl-MluI

ACCN:	NM_008847
ORF Size:	1638 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:	<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:	NM_008847.3
RefSeq Size:	2553 bp
RefSeq ORF:	1641 bp
Locus ID:	18720
UniProt ID:	P70182
Cytogenetics:	3 F2.1

Gene Summary:

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:10679324, PubMed:18772378, PubMed:19153220, PubMed:20622009, PubMed:8798574). Positively regulates insulin-induced translocation of SLC2A4 to the cell membrane in adipocytes (PubMed:27739494).[UniProtKB/Swiss-Prot Function]