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PIP5K1C Rabbit mAb

Catalog # AP75915

Product Information

Application	WB
Primary Accession	O70161
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	72408

Additional Information

Gene ID	18717
Other Names	Pip5K1C
Dilution	WB~~1:1000-1:5000
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	Pip5k1c {ECO:0000312|MGI:MGI:1298224}
Synonyms	Kiaa0589
Function	Catalyzes the phosphorylation of phosphatidylinositol 4- phosphate (PtdIns(4)P/PI4P) to form phosphatidylinositol 4,5- bisphosphate (PtdIns(4,5)P2/PIP2), a lipid second messenger that regulates several cellular processes such as signal transduction, vesicle trafficking, actin cytoskeleton dynamics, cell adhesion, and cell motility (PubMed:14741049, PubMed:20622009, PubMed:22942276, PubMed:9535851). PtdIns(4,5)P2 can directly act as a second messenger or can be utilized as a precursor to generate other second messengers: inositol 1,4,5-trisphosphate (IP3), diacylglycerol (DAG) or phosphatidylinositol-3,4,5-trisphosphate (PtdIns(3,4,5)P3/PIP3) (By similarity). PIP5K1A-mediated phosphorylation of PtdIns(4)P is the predominant pathway for PtdIns(4,5)P2 synthesis (By similarity). Together with PIP5K1A, is required for phagocytosis, both enzymes regulating different types of actin remodeling at sequential steps

(PubMed:19153220). Promotes particle attachment by generating the pool of PtdIns(4,5)P2 that induces controlled actin depolymerization to facilitate Fc-gamma-R clustering. Mediates RAC1-dependent reorganization of actin filaments. Required for synaptic vesicle transport (PubMed:15386003). Controls the plasma membrane pool of PtdIns(4,5)P2 implicated in synaptic vesicle endocytosis and exocytosis (By similarity). Plays a role in endocytosis mediated by clathrin and AP-2 (adaptor protein complex 2) (PubMed:16707488). Required for clathrin-coated pits assembly at the synapse (By similarity). Participates in cell junction assembly (By similarity). Modulates adherens junctions formation by facilitating CDH1/cadherin trafficking (By similarity). Required for focal adhesion dynamics (PubMed:12422220). Modulates the targeting of talins (TLN1 and TLN2) to the plasma membrane and their efficient assembly into focal adhesions (By similarity). Regulates the interaction between talins (TLN1 and TLN2) and beta-integrins (By similarity). Required for uropodium formation and retraction of the cell rear during directed migration (PubMed:17928408). Has a role in growth factor-stimulated directional cell migration and adhesion (PubMed:17635937). Required for talin assembly into nascent adhesions forming at the leading edge toward the direction of the growth factor (PubMed:17635937). Negative regulator of T-cell activation and adhesion (PubMed:20855869). Negatively regulates integrin alpha-L/beta-2 (LFA-1) polarization and adhesion induced by T- cell receptor (PubMed:20855869). Together with PIP5K1A has a role during embryogenesis and together with PIP5K1B may have a role immediately after birth (PubMed:17609388, PubMed:20622009).

Cellular Location

Cell membrane; Peripheral membrane protein; Cytoplasmic side {ECO:0000250|UniProtKB:Q5I6B8}. Endomembrane system {ECO:0000250|UniProtKB:Q5I6B8}. Cytoplasm. Cell junction, focal adhesion. Cell junction, adherens junction {ECO:0000250|UniProtKB:O60331}. Cell projection, ruffle membrane {ECO:0000250|UniProtKB:Q5I6B8}. Cell projection, phagocytic cup. Cell projection, uropodium. Note=During directional migration isoform 1 localized at the uropodium, and isoform 3 localized all along cell membrane including the uropodium and the leading edge

Tissue Location

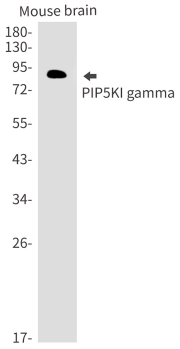
High expression in brain. Also detected in lung, thymus, heart, testicle, kidney and embryo. Highly expressed in forebrain, in particular in cerebellum, hippocampus and cerebral cortex.

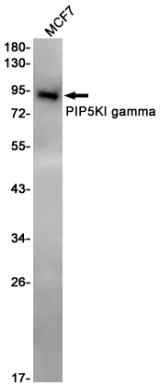
Background

Enables 1-phosphatidylinositol-4-phosphate 5-kinase activity. Involved in regulation of postsynaptic neurotransmitter receptor internalization and regulation of synaptic vesicle endocytosis. Acts upstream of or within axonogenesis; phosphatidylinositol biosynthetic process; and platelet aggregation. Located in cytosol. Is active in glutamatergic synapse and postsynaptic density. Is expressed in several structures, including alimentary system; central nervous system; genitourinary system; heart; and sensory organ. Human ortholog(s) of this gene implicated in lethal congenital contracture syndrome 3. Orthologous to human PIP5K1C (phosphatidylinositol-4-phosphate 5-kinase type 1 gamma).

Images

Western blot analysis of PIP5KI gamma in mouse brain lysates using PIP5K1C antibody.





Western blot analysis of PIP5KI gamma in MCF-7 lysates using PIP5KI gamma antibody.

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