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KD-Validated Anti-PIP5K1C Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI2235

Product Information

Application	WB
Primary Accession	O60331
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	25GB1540
Calculated MW	73260
Gene Name	PIP5K1C
Aliases	PIP5K1C; Phosphatidylinositol-4-Phosphate 5-Kinase Type 1 Gamma; PIP5Kgamma; KIAA0589; LCCS3; Phosphatidylinositol-4-Phosphate 5-Kinase, Type I, Gamma; Phosphatidylinositol 4-Phosphate 5-Kinase Type-1 Gamma; Type I Phosphatidylinositol 4-Phosphate 5-Kinase Gamma; PtdIns(4)P-5-Kinase 1 Gamma; PIP5K1gamma; EC 2.7.1.68; Diphosphoinositide Kinase; Type I PIP Kinase; PIP5K1-Gamma; PIP5K-GAMMA; EC 2.7.1
Immunogen	A synthesized peptide derived from human PIP5K1C

Additional Information

Gene ID	23396
Other Names	Phosphatidylinositol 4-phosphate 5-kinase type-1 gamma, PIP5K1gamma, PtdIns(4)P-5-kinase 1 gamma, 2.7.1.68, Type I phosphatidylinositol 4-phosphate 5-kinase gamma, PIP5K1C (HGNC:8996), KIAA0589

Protein Information

Name	PIP5K1C (HGNC:8996)
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:12422219, PubMed:22942276). 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) (Probable). 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 (By similarity). 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 (By similarity). Controls the plasma membrane pool of PtdIns(4,5)P2 implicated in synaptic vesicle endocytosis and exocytosis (PubMed:12847086). Plays a role in endocytosis mediated by clathrin and AP-2 (adaptor protein complex 2) (PubMed:12847086). Required for clathrin-coated pits assembly at the synapse (PubMed:17261850). Participates in cell junction assembly (PubMed:17261850). Modulates adherens junctions formation by facilitating CDH1/cadherin trafficking (PubMed:17261850). Required for focal adhesion dynamics. Modulates the targeting of talins (TLN1 and TLN2) to the plasma membrane and their efficient assembly into focal adhesions (PubMed:12422219). Regulates the interaction between talins (TLN1 and TLN2) and beta-integrins (PubMed:12422219). Required for uropodium formation and retraction of the cell rear during directed migration (By similarity). Has a role in growth factor-stimulated directional cell migration and adhesion (By similarity). 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 (By similarity). Negatively regulates integrin alpha-L/beta-2 (LFA-1) polarization and adhesion induced by T-cell receptor (By similarity). Together with PIP5K1A has a role during embryogenesis and together with PIP5K1B may have a role immediately after birth (By similarity).

Cellular Location

Cell membrane; Peripheral membrane protein; Cytoplasmic side {ECO:0000250|UniProtKB:Q5I6B8}. Endomembrane system {ECO:0000250|UniProtKB:Q5I6B8}. Cytoplasm {ECO:0000250|UniProtKB:O70161}. Cell junction, focal adhesion. Cell junction, adherens junction. Cell projection, ruffle membrane {ECO:0000250|UniProtKB:Q5I6B8}. Cell projection, phagocytic cup {ECO:0000250|UniProtKB:O70161}. Cell projection, uropodium {ECO:0000250|UniProtKB:O70161}. Note=Detected in plasma membrane invaginations. Isoform 3 is detected in intracellular vesicle-like structures

Tissue Location

[Isoform 1]: Isoform 1 is strongly expressed in brain and also detected in heart and lung [Isoform 3]: Isoform 3 is detected in large amounts in heart and large intestine, is also present in lung, pancreas and thyroid, and to a lesser extent in brain, stomach and kidney

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