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PIP5K3 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7172a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9Y2I7
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	237136
Antigen Region	1531-1561

Additional Information

Gene ID	200576
Other Names	1-phosphatidylinositol 3-phosphate 5-kinase, Phosphatidylinositol 3-phosphate 5-kinase, FYVE finger-containing phosphoinositide kinase, PIKfyve, Phosphatidylinositol 3-phosphate 5-kinase type III, PIPkin-III, Type III PIP kinase, PIKFYVE, KIAA0981, PIP5K3
Target/Specificity	This PIP5K3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1531-1561 amino acids from the Central region of human PIP5K3.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PIP5K3 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIKFYVE (HGNC:23785)
Synonyms	KIAA0981, PIP5K3

Function	Dual specificity kinase implicated in myriad essential cellular processes such as maintenance of endomembrane homeostasis, and endocytic-vacuolar pathway, lysosomal trafficking, nuclear transport, stress- or hormone-induced signaling and cell cycle progression (PubMed:23086417). The PI(3,5)P2 regulatory complex regulates both the synthesis and turnover of phosphatidylinositol 3,5-bisphosphate (PtdIns(3,5)P2) (PubMed:17556371, PubMed:41639454). Sole enzyme to catalyze the phosphorylation of phosphatidylinositol 3-phosphate on the fifth hydroxyl of the myo-inositol ring, to form (PtdIns(3,5)P2) (PubMed:17556371, PubMed:41639454). Also catalyzes the phosphorylation of phosphatidylinositol on the fifth hydroxyl of the myo-inositol ring, to form phosphatidylinositol 5-phosphate (PtdIns(5)P) (PubMed:22621786). Has serine-protein kinase activity and is able to autophosphorylate and transphosphorylate. Autophosphorylation inhibits its own phosphatidylinositol 3-phosphate 5-kinase activity, stimulates FIG4 lipid phosphatase activity and down-regulates lipid product formation (PubMed:33098764). Involved in key endosome operations such as fission and fusion in the course of endosomal cargo transport (PubMed:22621786). Required for the maturation of early into late endosomes, phagosomes and lysosomes (PubMed:30612035). Regulates vacuole maturation and nutrient recovery following engulfment of macromolecules, initiates the redistribution of accumulated lysosomal contents back into the endosome network (PubMed:27623384). Critical regulator of the morphology, degradative activity, and protein turnover of the endolysosomal system in macrophages and platelets (By similarity). In neutrophils, critical to perform chemotaxis, generate ROS, and undertake phagosome fusion with lysosomes (PubMed:28779020). Plays a key role in the processing and presentation of antigens by major histocompatibility complex class II (MHC class II) mediated by CTSS (PubMed:30612035). Regulates melanosome biogenesis by controlling the delivery of proteins from the endosomal compartment to the melanosome (PubMed:29584722). Essential for systemic glucose homeostasis, mediates insulin-induced signals for endosome/actin remodeling in the course of GLUT4 translocation/glucose uptake activation (By similarity). Synthesis if (PtdIns(3,5)P2) is required for the cGAS-STING pathway (PubMed:41639454). Supports microtubule- based endosome-to-trans-Golgi network cargo transport, through association with SPAG9 and RABEPK (By similarity). Mediates EGFR trafficking to the nucleus (PubMed:17909029).
Cellular Location	Endosome membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9Z1T6}. Early endosome membrane; Peripheral membrane protein. Cytoplasmic vesicle, phagosome membrane; Peripheral membrane protein. Late endosome membrane; Peripheral membrane protein {ECO:0000250|UniProtKB:Q9Z1T6}. Note=Mainly associated with membranes of the late endocytic pathway.

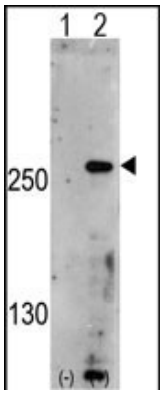
Background

PIP5K3 belongs to a large family of lipid kinases that alter the phosphorylation status of intracellular phosphatidylinositol. Signaling by phosphorylated species of phosphatidylinositol regulates diverse cellular processes, including membrane trafficking and cytoskeletal reorganization.

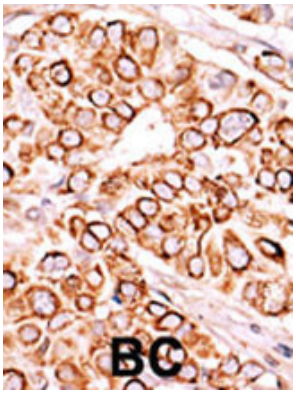
References

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Yang, S.A., et al., J. Biol. Chem. 279(40):42331-42336 (2004).
Ikonomov, O.C., et al., J. Biol. Chem. 278(51):50863-50871 (2003).
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Images



Western blot analysis of PIP5K3 (arrow) using rabbit polyclonal PIP5K3 Antibody (Center) (Cat.#AP7172a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the PIP5K3 gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Regulation of the glutamate transporter EAAT4 by PIKfyve.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.