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PIP4K2A Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5494

Product Information

Application	FC, IHC-P, WB, IF
Primary Accession	P48426
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	46225
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	5305
Antigen Region	329-363
Other Names	Phosphatidylinositol 5-phosphate 4-kinase type-2 alpha, 1-phosphatidylinositol 5-phosphate 4-kinase 2-alpha, Diphosphoinositide kinase 2-alpha, PIP5KIII, Phosphatidylinositol 5-phosphate 4-kinase type II alpha, PI(5)P 4-kinase type II alpha, PIP4KII-alpha, PtdIns(4)P-5-kinase B isoform, PtdIns(4)P-5-kinase C isoform, PtdIns(5)P-4-kinase isoform 2-alpha, PIP4K2A, PIP5K2, PIP5K2A
Dilution	FC~~1:25 IHC-P~~1:100~500 WB~~1:1000 IF~~1:25
Target/Specificity	This PIP4K2A antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 329-363 amino acids from the C-terminal region of human PIP4K2A.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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	PIP4K2A Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIP4K2A (HGNC:8997)

Function	Catalyzes the phosphorylation of phosphatidylinositol 5- phosphate (PtdIns5P) on the fourth hydroxyl of the myo-inositol ring, to form phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P2) (PubMed:23326584, PubMed:9367159). Has both ATP- and GTP-dependent kinase activities (PubMed:26774281). May exert its function by regulating the levels of PtdIns5P, which functions in the cytosol by increasing AKT activity and in the nucleus signals through ING2 (PubMed:18364242). May regulate the pool of cytosolic PtdIns5P in response to the activation of tyrosine phosphorylation (By similarity). Required for lysosome-peroxisome membrane contacts and intracellular cholesterol transport through modulating peroxisomal PtdIns(4,5)P2 level (PubMed:29353240). In collaboration with PIP4K2B, has a role in mediating autophagy in times of nutrient stress (By similarity). Required for autophagosome-lysosome fusion and the regulation of cellular lipid metabolism (PubMed:31091439). May be involved in thrombopoiesis, and the terminal maturation of megakaryocytes and regulation of their size (By similarity). Negatively regulates insulin signaling through a catalytic-independent mechanism (PubMed:31091439). PIP4Ks interact with PIP5Ks and suppress PIP5K-mediated PtdIns(4,5)P2 synthesis and insulin-dependent conversion to PtdIns(3,4,5)P3 (PubMed:31091439).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:O70172}. Nucleus. Lysosome {ECO:0000250|UniProtKB:O70172}. Cytoplasm. Photoreceptor inner segment {ECO:0000250|UniProtKB:O70172}. Cell projection, cilium, photoreceptor outer segment {ECO:0000250|UniProtKB:O70172}. Note=May translocate from the cytosol to the cell membrane upon activation of tyrosine phosphorylation. May translocate from the inner to the outer segments of the rod photoreceptor cells in response to light (By similarity) Localization to the nucleus is modulated by the interaction with PIP4K2B. {ECO:0000250|UniProtKB:O70172, ECO:0000269|PubMed:20583997}
Tissue Location	Expressed ubiquitously, with high levels in the brain. Present in most tissues, except notably skeletal muscle and small intestine.

Background

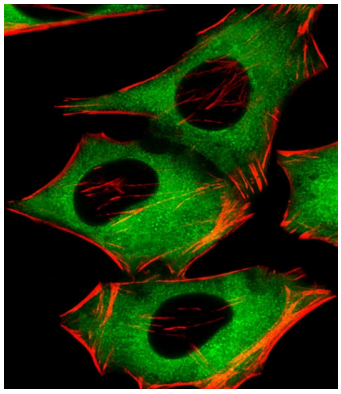
Catalyzes the phosphorylation of phosphatidylinositol 5- phosphate (PtdIns5P) on the fourth hydroxyl of the myo-inositol ring, to form phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P2). May exert its function by regulating the levels of PtdIns5P, which functions in the cytosol by increasing AKT activity and in the nucleus signals through ING2. May regulate the pool of cytosolic PtdIns5P in response to the activation of tyrosine phosphorylation. May negatively regulate insulin- stimulated glucose uptake by lowering the levels of PtdIns5P. May be involved in thrombopoiesis, and the terminal maturation of megakaryocytes and regulation of their size.

References

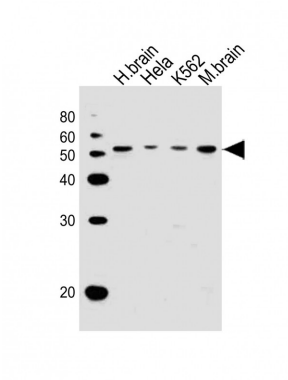
Boronenkov I.V.,et al.J. Biol. Chem. 270:2881-2884(1995).
Boronenkov I.V.,et al.Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
Divecha N.,et al.Biochem. J. 309:715-719(1995).
Deloukas P.,et al.Nature 429:375-381(2004).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images

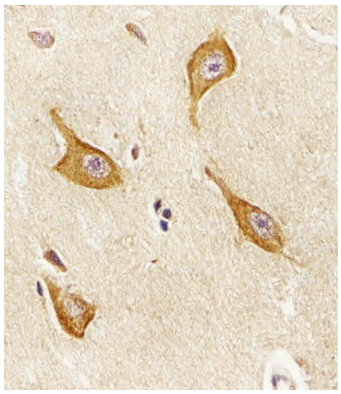
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0. 1% Triton X-100



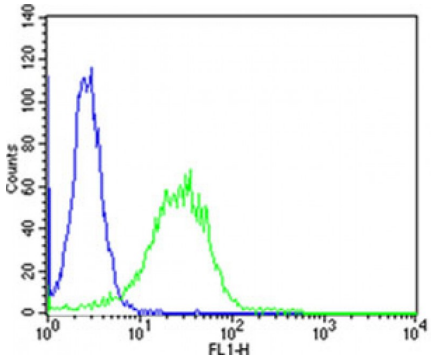
permeabilized Hela (Human Cervical epithelial adenocarcinoma cell line) cells labeling PIP4K2A with AW5494 at 1/25 dilution, followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (1583138) secondary antibody at 1/400 dilution (green). Confocal image showing cytoplasmic staining on Hela cell line. Cytoplasmic actin is detected with Alexa Fluor® 555 conjugated with Phalloidin (OB16636430) at 1/100 dilution (red).



All lanes : Anti-PIP4K2A Antibody (C-term) at 1:1000 dilution Lane 1: human brain lysates Lane 2: Hela whole cell lysates Lane 3: K562 whole cell lysates Lane 4: mouse brain lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 46 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Immunohistochemical analysis of paraffin-embedded H. brain section using PIP4K2A Antibody (C-term)(Cat#AW5494). AW5494 was diluted at 1:25 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.



Flow cytometric analysis of Hela cells using PIP4K2A Antibody (C-term)(green, Cat#AW5494) compared to an isotype control of rabbit IgG(blue). AW5494 was diluted at 1:25 dilution. An Alexa Fluor® 488 goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody.

Citations

- Distribution and localization of phosphatidylinositol 5-phosphate, 4-kinase alpha and beta in the brain