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PI4K2A (PI4K II) Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8032a

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	Q9BTU6
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1679
Calculated MW	54022
Antigen Region	1-30

Additional Information

Gene ID	55361
Other Names	Phosphatidylinositol 4-kinase type 2-alpha, Phosphatidylinositol 4-kinase type II-alpha, PI4K2A
Target/Specificity	This PI4K2A (PI4K II) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human PI4K2A (PI4K II).
Dilution	WB~~1:8000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. 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	PI4K2A (PI4K II) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PI4K2A
Function	Membrane-bound phosphatidylinositol-4 kinase (PI4-kinase) that catalyzes the phosphorylation of phosphatidylinositol (PI) to phosphatidylinositol 4-phosphate (PI4P), a lipid that plays important roles in endocytosis, Golgi

	function, protein sorting and membrane trafficking and is required for prolonged survival of neurons. Besides, phosphorylation of phosphatidylinositol (PI) to phosphatidylinositol 4- phosphate (PI4P) is the first committed step in the generation of phosphatidylinositol 4,5-bisphosphate (PIP2), a precursor of the second messenger inositol 1,4,5-trisphosphate (InsP3).
Cellular Location	Golgi apparatus, trans-Golgi network membrane; Lipid-anchor. Membrane raft. Cell projection, dendrite {ECO:0000250|UniProtKB:Q2TBE6}. Presynaptic cell membrane {ECO:0000250|UniProtKB:Q2TBE6}. Synapse, synaptosome {ECO:0000250|UniProtKB:Q2TBE6}. Mitochondrion {ECO:0000250|UniProtKB:Q2TBE6}. Endosome. Endosome membrane. Cytoplasmic vesicle. Membrane; Lipid-anchor. Cell membrane. Perikaryon {ECO:0000250|UniProtKB:Q2TBE6}. Cell projection, neuron projection {ECO:0000250|UniProtKB:Q2TBE6}. Note=Found in subdomains of the plasma membrane termed non-caveolar membrane rafts. Transported from neuronal cell body to neuron projections and neurite tips in a BLOC-1- and AP-3-complexes-dependent manner. {ECO:0000250|UniProtKB:Q2TBE6}
Tissue Location	Widely expressed. Highest expression is observed in kidney, brain, heart, skeletal muscle, and placenta and lowest expression is observed in colon, thymus, and small intestine

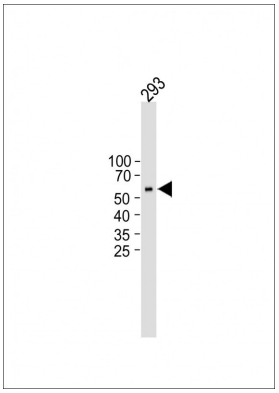
Background

Phosphatidylinositolpolyphosphates (PtdInsPs) are centrally involved in many biologic processes, ranging from cell growth and organization of the actin cytoskeleton to endo- and exocytosis. PI4KII phosphorylates PtdIns at the D-4 position, an essential step in the biosynthesis of PtdInsPs. PI4K II is activated by detergent and inhibited by adenosine. Overexpression of PI4KII in COS-7 cells increases synthesis of PtdIns4P. Some cells overexpressing PI4KII have scattered or no perinuclear Golgi. Knockdown of PI4KII by RNA interference (RNAi) does not disrupt the Golgi, and some cells show expanded Golgi. RNAi reduces the Golgi level of PtdIns4P and blocks the association between AP1 and the trans-Golgi network. PI4KII RNAi had little effect on intra-Golgi trafficking, but it inhibited export to plasma membrane export by 35%. It has been proposed that PI4KII generates PtdIns4P-rich domains within the Golgi that specify docking of the AP1 coat machinery.

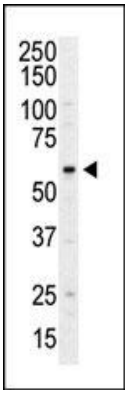
References

Wang, Y.J., et al., Cell 114(3):299-310 (2003). Minogue, S., et al., J. Biol. Chem. 276(20):16635-16640 (2001). Barylko, B., et al., J. Biol. Chem. 276(11):7705-7708 (2001). Waugh, M.G., et al., Biochem. J. 373 (Pt 1), 57-63 (2003).

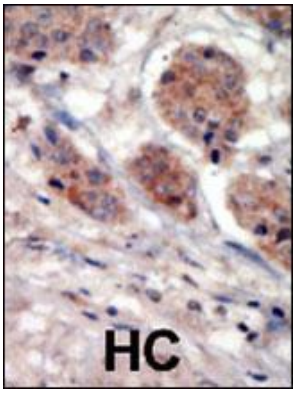
Images



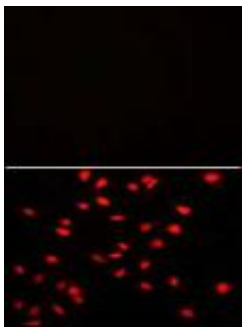
All lanes : Anti-PI4K2A (PI4K II) Antibody (N-term) at 1:1000 dilution Lane 1: 293 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 60kDa Blocking/Dilution buffer: 5% NFDM/TBST.



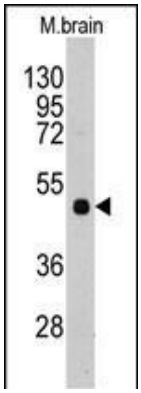
Western blot analysis of anti-PI4K II Pab (Cat. #AP8032a) in HL60 cell lysate. PI4K II (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.



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



Negative control of hela cells without Alexa-Fluor-546-conjugated donkey anti-rabbit lgG (H+L).Alexa-Fluor-546 emits orange fluorescence. Immunofluorescence analysis of PI4K2A (PI4K II) Antibody (N-term) in HeLa cells. 0.025 mg/ml primary antibody was followed by Alexa-Fluor-546-conjugated donkey anti-rabbit lgG (H+L).



Western blot analysis of anti-PI4K2A Antibody (N-term D2) (Cat.#AP7575d) in mouse brain tissue lysates (35ug/lane). PI4KII(arrow) was detected using the purified Pab.