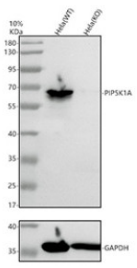
PIP5K1A Antibody / PIP5K1 Alpha Polyclonal Antibody (FY13024)

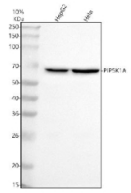
Catalog No.	Formulation	Size
FY13024	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

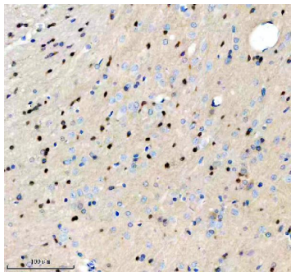
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q99755
Localization	Nuclear, cytoplasmic, cell membrane
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Immunoprecipitation: 2-4ug/500ug of lysate Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This PIP5K1A Antibody / PIP5K1 Alpha Polyclonal Antibody is available for research use only.



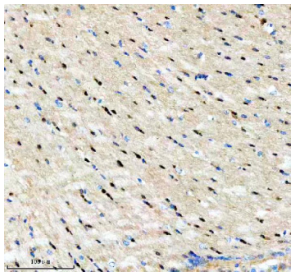
PIP5K1A Antibody Western Blot Validation in HeLa Wild-Type and PIP5K1A Knockout Cells. Western blot analysis of human HeLa wild-type (WT, lane 1) and PIP5K1A knockout (KO, lane 2) whole-cell lysates using PIP5K1 Alpha Polyclonal Antibody at 0.5 ug/ml. A band at approximately 63 kDa is detected in the WT lysate and is absent or markedly reduced in the KO sample, supporting antibody specificity for PIP5K1A. GAPDH serves as the loading control.



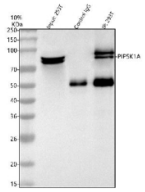
PIP5K1A Antibody Western Blot Analysis of HepG2 and HeLa Cell Lysates. Western blot analysis of human HepG2 (lane 1) and HeLa (lane 2) whole-cell lysates using PIP5K1 Alpha Polyclonal Antibody at 0.5 ug/ml. Immunoreactive bands are detected at approximately 68-70 kDa in both samples, compared with the predicted molecular weight of approximately 63 kDa for PIP5K1A.



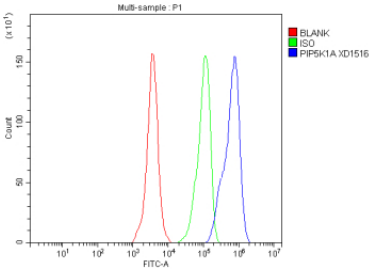
PIP5K1A Antibody IHC Staining of Rat Brain Tissue. Immunohistochemical analysis of FFPE rat brain tissue using PIP5K1 Alpha Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed in scattered cells throughout the tissue, with cytoplasmic immunoreactivity in cells exhibiting neuronal morphology. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



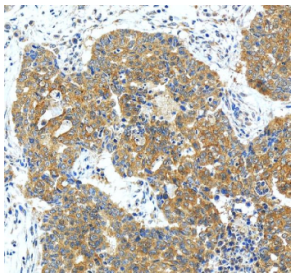
PIP5K1A Antibody IHC Staining of Mouse Brain Tissue. Immunohistochemical analysis of FFPE mouse brain tissue using PIP5K1 Alpha Polyclonal Antibody at 2 ug/ml. Brown DAB staining is distributed among cells within the brain parenchyma, including cytoplasmic staining in cells with neuronal morphology. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



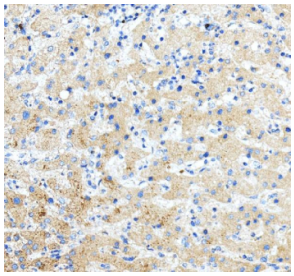
PIP5K1A Antibody Immunoprecipitation and Western Blot Analysis of Human 293T Cell Lysate. Immunoprecipitation of PIP5K1A from human 293T whole-cell lysate using PIP5K1 Alpha Polyclonal Antibody. Lane 1 contains input lysate (30 ug), lane 2 represents the rabbit IgG control immunoprecipitation, and lane 3 contains the antibody immunoprecipitate prepared using 2 ug of primary antibody and 500 ug of lysate. Western blot detection was performed using the same antibody at 0.5 ug/ml. Immunoreactive bands are observed at approximately 75-80 kDa, compared with the predicted PIP5K1A molecular weight of approximately 63 kDa. Phosphorylation and SUMOylation of PIP5K1A, including reported modification at Lys-244, have been associated with altered electrophoretic mobility and may contribute to higher-molecular-weight species, although the modifications responsible for the observed bands have not been confirmed.



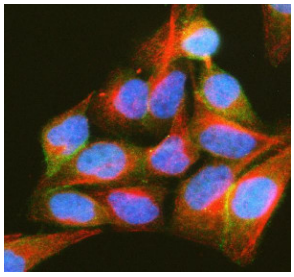
PIP5K1A Antibody FACS Staining of Fixed and Permeabilized HeLa Cells. Flow cytometry analysis of human HeLa cells using PIP5K1 Alpha Polyclonal Antibody at 1 ug per 10^6 cells. Cells were fixed with 4% paraformaldehyde, permeabilized, and incubated with the primary antibody, followed by DyLight 488-conjugated goat anti-rabbit IgG. The blue histogram represents antibody-stained cells, the green histogram represents the rabbit IgG isotype control, and the red histogram represents unstained cells. The antibody-stained population shows a rightward fluorescence shift relative to both controls, consistent with intracellular PIP5K1A detection.



PIP5K1A Antibody IHC Staining of Human Liver Cancer Tissue. Immunohistochemical analysis of FFPE human liver cancer tissue using PIP5K1 Alpha Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed throughout numerous tumor cells, with predominantly cytoplasmic immunoreactivity and variable staining near cellular boundaries. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



PIP5K1A Antibody IHC Staining of Human Liver Tissue. Immunohistochemical analysis of FFPE human liver tissue using PIP5K1 Alpha Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed in hepatocytes, with predominantly cytoplasmic distribution and variable staining among individual cells. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8, followed by overnight primary antibody incubation at 4oC.



PIP5K1A Antibody Immunofluorescence Staining of Human HeLa Cells. Immunofluorescence analysis of human HeLa cells using PIP5K1 Alpha Polyclonal Antibody at 5 ug/ml. PIP5K1A staining is shown in green using a DyLight 488-conjugated secondary antibody, while beta-tubulin is shown in red using a Cy3-conjugated secondary antibody. Blue nuclear counterstaining identifies cell nuclei. The merged image shows green PIP5K1A-associated fluorescence distributed primarily in the cytoplasmic region, overlapping portions of the red beta-tubulin staining. Enzymatic antigen retrieval was performed for 15 minutes before overnight primary antibody incubation at 4oC.

Description

PIP5K1A Antibody / PIP5K1 Alpha Polyclonal Antibody targets phosphatidylinositol-4-phosphate 5-kinase type I alpha, a lipid kinase encoded by the PIP5K1A gene. This enzyme catalyzes the phosphorylation of phosphatidylinositol 4-phosphate (PI4P) at the D-5 position of the inositol ring, generating phosphatidylinositol 4,5-bisphosphate [PI(4,5)P2]. Although PI(4,5)P2 represents a relatively small fraction of cellular membrane phospholipids, it serves as an essential regulator of numerous signaling and membrane-associated processes. PIP5K1A belongs to the type I phosphatidylinositol phosphate kinase family, which also includes PIP5K1B and PIP5K1C.

PI(4,5)P2 produced by PIP5K1A regulates actin cytoskeleton organization, membrane trafficking, endocytosis, exocytosis, and cell adhesion. The lipid interacts with numerous proteins containing phosphoinositide-binding domains, influencing their recruitment, localization, and activity at cellular membranes. PI(4,5)P2 also serves as the substrate for phospholipase C, which generates the second messengers inositol 1,4,5-trisphosphate and diacylglycerol. In addition, class I phosphoinositide 3-kinases phosphorylate PI(4,5)P2 to produce phosphatidylinositol 3,4,5-trisphosphate, connecting PIP5K1A activity to signaling pathways that regulate cell growth, metabolism, and survival.

PIP5K1A activity is controlled by interactions with small GTPases, membrane-associated proteins, and regulatory phosphorylation events. Members of the Rho family of GTPases influence phosphoinositide synthesis and actin remodeling, while interactions with proteins involved in membrane organization help establish localized PI(4,5)P2 pools. The spatial distribution of PIP5K1A is important because PI(4,5)P2 functions as a signaling lipid whose effects depend on its concentration within specific membrane compartments. Through these mechanisms, PIP5K1A helps coordinate changes in membrane structure with intracellular signaling and cytoskeletal dynamics.

Altered PIP5K1A expression and activity have been investigated in cancer biology, particularly in relation to cell proliferation, migration, and signaling through the PI3K-AKT pathway. Studies have also implicated this kinase in the

regulation of immune cell responses and membrane-associated signaling complexes. Because PI(4,5)P2 participates in multiple interconnected pathways, changes in its synthesis can influence diverse cellular functions. Research involving PIP5K1A Antibody contributes to understanding phosphoinositide metabolism, localized lipid signaling, cytoskeletal regulation, and the molecular mechanisms connecting membrane dynamics with cellular behavior.

PIP5K1A regulates phosphoinositide metabolism, membrane trafficking, and actin cytoskeleton organization, making it an important target in cell biology research.

Application Notes

Optimal dilution of the PIP5K1A Antibody / PIP5K1 Alpha Polyclonal Antibody should be determined by the researcher.

Immunogen

E.coli-derived human PIP5K1A recombinant protein (Position: I33-H562) was used as the immunogen for the PIP5K1A antibody.

Storage

After reconstitution, the PIP5K1A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Phosphatidylinositol-4-phosphate 5-kinase type-1 alpha antibody, Phosphatidylinositol 4-phosphate 5-kinase type I alpha antibody, Phosphatidylinositol 4-phosphate 5-kinase alpha antibody, PIP5K1 alpha antibody, PIP5KI alpha antibody, PIP5K alpha antibody, PI4P5K alpha antibody, Type I phosphatidylinositol phosphate kinase alpha antibody

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