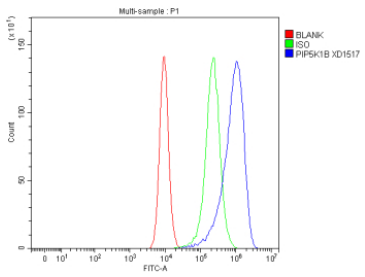
PIP5K1B Antibody / Phosphatidylinositol-4-phosphate 5-kinase type 1 beta (FY12666)

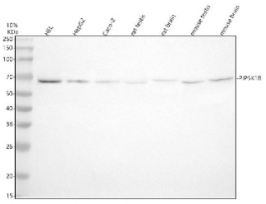
Catalog No.	Formulation	Size
FY12666	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
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	O14986
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This PIP5K1B antibody is available for research use only.



Flow Cytometry analysis of CACO-2 cells using anti-PIP5K1B antibody. Overlay histogram showing CACO-2 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-PIP5K1B antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of PIP5K1B using anti-PIP5K1B antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human HEL whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human Caco-2 whole cell lysates, Lane 4: rat testis tissue lysates, Lane 5: rat brain tissue lysates, Lane 6: mouse testis tissue lysates, Lane 7: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PIP5K1B antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The expected molecular weight of PIP5K1B is ~61 kDa.

Description

PIP5K1B antibody detects Phosphatidylinositol-4-phosphate 5-kinase type 1 beta, a lipid kinase that catalyzes the phosphorylation of phosphatidylinositol-4-phosphate to generate phosphatidylinositol-4,5-bisphosphate, a key signaling lipid controlling actin dynamics and membrane trafficking. PIP5K1B regulates cellular architecture, vesicle transport, and signal transduction by producing pools of phosphatidylinositol-4,5-bisphosphate that recruit actin-binding and signaling proteins to membranes. The PIP5K1B antibody is widely used in cell signaling, neurobiology, and cancer research to study phosphoinositide metabolism and actin regulation.

PIP5K1B is encoded by the PIP5K1B gene on human chromosome 9q34.11. The protein is approximately 540 amino acids long and localizes mainly to the plasma membrane, with additional pools at the Golgi and endosomal compartments. As a member of the phosphatidylinositol-4-phosphate 5-kinase type I family, PIP5K1B works in concert with its isoforms PIP5K1A and PIP5K1C to sustain local lipid signaling domains that control cytoskeletal remodeling and vesicular trafficking.

The PIP5K1B antibody detects a 68 kilodalton band by western blot and shows strong plasma-membrane enrichment under immunofluorescence microscopy. PIP5K1B contributes to the organization of stress fibers and focal adhesions by controlling actin polymerization. It also modulates membrane ruffling, clathrin-mediated endocytosis, and vesicle docking. In neurons, PIP5K1B maintains synaptic vesicle recycling and presynaptic architecture by sustaining phosphatidylinositol-4,5-bisphosphate-dependent protein interactions.

Mutations or reduced expression of PIP5K1B have been associated with parkinsonism-dystonia syndromes, where impaired phosphoinositide metabolism leads to defective membrane trafficking and axonal degeneration. Dysregulation of PIP5K1B activity also contributes to cancer cell invasion through enhanced focal-adhesion turnover and migration. As a central regulator of lipid-signaling microdomains, PIP5K1B acts as a molecular hub linking mechanical and biochemical cues at the cell membrane.

Because PIP5K1B integrates phospholipid metabolism with cytoskeletal regulation, it provides insight into how membrane signaling orchestrates cellular architecture and motility. NSJ Bioreagents provides a validated PIP5K1B antibody optimized for its applications, supporting research into membrane dynamics, neuronal trafficking, and actin-based motility.

Application Notes

Optimal dilution of the PIP5K1B antibody should be determined by the researcher.

Immunogen

E.coli-derived human PIP5K1B recombinant protein (Position: R394-L540) was used as the immunogen for the PIP5K1B antibody.

Storage

After reconstitution, the PIP5K1B antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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