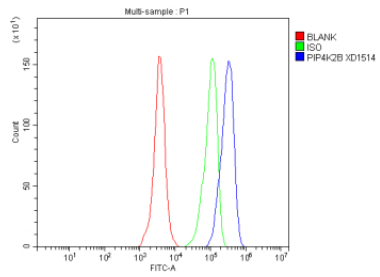
PIP4K2B Antibody / Phosphatidylinositol-5-phosphate 4-kinase type-2 beta (FY12590)

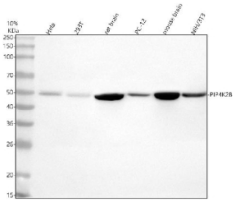
Catalog No.	Formulation	Size
FY12590	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	P78356
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This PIP4K2B antibody is available for research use only.



Flow Cytometry analysis of HeLa cells using anti-PIP4K2B antibody. Overlay histogram showing HeLa 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-PIP4K2B 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 PIP4K2B using anti-PIP4K2B antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: rat brain tissue lysates, Lane 4: rat PC-12 whole cellue lysates, Lane 5: mouse brain tissue lysates, Lane 6: mouse NIH/3T3 whole cell 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-PIP4K2B 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 PIP4K2B is ~47 kDa.

Description

PIP4K2B antibody detects Phosphatidylinositol-5-phosphate 4-kinase type-2 beta, a lipid kinase involved in the generation of phosphatidylinositol-4,5-bisphosphate (PIP2), a key signaling molecule regulating membrane trafficking, cytoskeletal organization, and nuclear signaling. PIP4K2B phosphorylates phosphatidylinositol-5-phosphate (PI5P) at the 4-position to produce PIP2, controlling both cytoplasmic and nuclear pools of phosphoinositides. The PIP4K2B antibody is used in cell signaling and lipid metabolism research to study phosphoinositide regulation and signaling compartmentalization.

PIP4K2B is encoded by the PIP4K2B gene located on human chromosome 17q11.2. The protein is approximately 416 amino acids in length and belongs to the type II phosphatidylinositol 4-kinase family. PIP4K2B localizes to both the cytoplasm and nucleus, dynamically shuttling in response to growth factor stimulation and metabolic status. Its nuclear localization is critical for maintaining gene expression through phosphoinositide-dependent transcriptional regulation.

The PIP4K2B antibody detects a 47 kilodalton protein by western blot and reveals cytoplasmic and nuclear staining under confocal microscopy. PIP4K2B cooperates with its isoforms PIP4K2A and PIP4K2C to maintain phosphoinositide homeostasis. It modulates nuclear PIP2 levels, influencing chromatin remodeling, mRNA processing, and DNA damage responses. In the cytoplasm, PIP4K2B regulates endosomal trafficking and actin cytoskeleton reorganization, integrating lipid metabolism with cell motility.

Functionally, PIP4K2B connects metabolic signaling with growth control through crosstalk between phosphoinositide and mTOR pathways. Loss of PIP4K2B sensitizes cells to metabolic stress and DNA damage, while its overexpression enhances proliferation and survival in cancer cells. Mutations or reduced expression of PIP4K2B have been linked to metabolic disorders, insulin resistance, and neurodegeneration.

Because of its dual role in lipid signaling and nuclear regulation, PIP4K2B is a key node in phosphoinositide-mediated signal integration. NSJ Bioreagents provides a validated PIP4K2B antibody optimized for its applications, supporting research into membrane signaling, metabolism, and nuclear phosphoinositide control.

Application Notes

Optimal dilution of the PIP4K2B antibody should be determined by the researcher.

Immunogen

E.coli-derived human PIP4K2B recombinant protein (Position: D116-K360) was used as the immunogen for the PIP4K2B antibody.

Storage

After reconstitution, the PIP4K2B antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at

-20oC. Avoid repeated freezing and thawing.