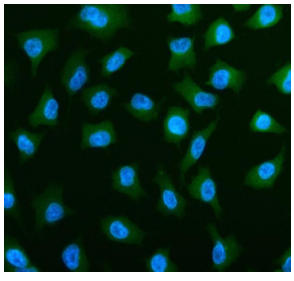
PLS3 Antibody / Plastin 3 (FY12230)

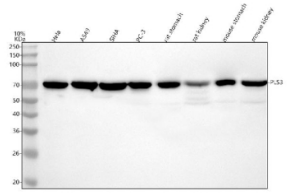
Catalog No.	Formulation	Size
FY12230	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

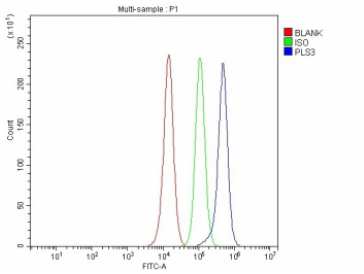
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P13797
Localization	Cytoplasmic
Applications	ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunoprecipitation : 2-4ug/500ug of lysate Immunofluorescence : 5ug/ml Immunocytochemistry : 5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This PLS3 antibody is available for research use only.



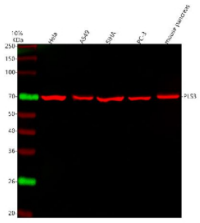
Immunofluorescent staining of PLS3 using anti-PLS3 antibody (green). PLS3 was detected in an immunocytochemical section of cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-PLS3 antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



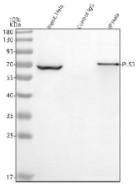
Western blot analysis of PLS3 using anti-PLS3 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Siha whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat stomach tissue lysates, Lane 6: rat kidney tissue lysates, Lane 7: mouse stomach tissue lysates, Lane 8: mouse kidney 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-PLS3 antibody at 0.25 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 enhanced chemiluminescent. A specific band was detected for PLS3 at approximately 71 kDa. The expected band size for PLS3 is at 71,69,66 kDa.



Flow Cytometry analysis of PC-3 cells using anti-PLS3 antibody. Overlay histogram showing PC-3 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-PLS3 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 PLS3 using anti-PLS3 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human SiHa whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: mouse pancreas 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-PLS3 antibody at 0.25 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-DyLight 647 Conjugated secondary antibody at a dilution of 1:2000 for 1.5 hour at RT. A specific band was detected for PLS3 at approximately 71 kDa. The expected band size for PLS3 is at 71 kDa.



Immunoprecipitating PLS3 in Hela whole cell lysate. Western blot analysis of PLS3 using anti-PLS3 antibody. Lane 1: Hela whole cell lysates (30ug) Lane 2: Rabbit control IgG instead of anti-PLS3 antibody in Hela whole cell lysate. Lane 3: anti-PLS3 antibody (2ug) + Hela whole cell lysate (500ug) After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-PLS3 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A specific band was detected for PLS3 at approximately 71 kDa. The expected band size for PLS3 is at 71 kDa.

Description

PLS3 antibody detects Plastin-3, encoded by the PLS3 gene on chromosome Xq23. PLS3 antibody is widely used in research on actin dynamics, cytoskeletal regulation, and bone disease. Plastin-3 belongs to the plastin family of actin-bundling proteins, which regulate the organization of actin filaments in diverse cellular processes including adhesion, migration, endocytosis, and vesicle trafficking. PLS3 is expressed in many tissues, with enrichment in intestine, kidney, and bone, and is critical for cytoskeletal integrity and mechanosensing.

Structurally, Plastin-3 is a ~70 kDa protein containing two actin-binding domains and a regulatory calcium-binding EF-hand motif. The dual actin-binding domains enable crosslinking of actin filaments into bundles, while the EF-hand motif

confers regulation by calcium signaling. Isoforms generated by alternative splicing provide tissue-specific modulation of activity.

Functionally, PLS3 stabilizes actin structures required for cell adhesion, vesicle trafficking, and mechanotransduction. In osteocytes, PLS3 contributes to sensing mechanical load and bone remodeling. In epithelial cells, it supports brush border formation and endocytic processes. Loss of function impairs cytoskeletal stability, leading to cellular fragility and disease phenotypes. Researchers use PLS3 antibody to study actin remodeling, mechanobiology, and cytoskeletal disorders.

Clinically, mutations in PLS3 are associated with X-linked osteoporosis, a rare bone fragility disorder characterized by low bone mineral density and fracture susceptibility. Variants in PLS3 impair actin bundling in osteocytes, disrupting mechanosensing and bone homeostasis. PLS3 has also been implicated in cancer, where altered expression influences invasion and metastasis. NSJ Bioreagents supplies PLS3 antibody for use in bone biology, cytoskeletal research, and oncology.

Experimentally, PLS3 antibody is applied in western blotting to detect the ~70 kDa protein, in immunofluorescence to visualize actin bundles, and in immunohistochemistry to study tissue distribution. Co-immunoprecipitation with PLS3 antibody identifies actin-binding partners and regulatory proteins. Functional studies using PLS3 antibody help link cytoskeletal organization with mechanical and signaling pathways.

Application Notes

Optimal dilution of the PLS3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PLS3 recombinant protein (Position: M1-D580) was used as the immunogen for the PLS3 antibody.

Storage

After reconstitution, the PLS3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.