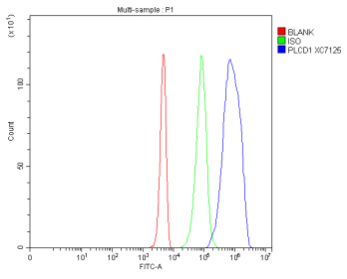
# PLCD1 Antibody / Phospholipase C delta 1 (FY13142)

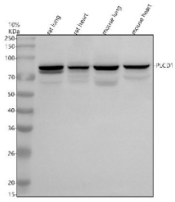
| Catalog No. | Formulation | Size |
|---|---|---|
| FY13142 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**Bulk quote request**

| | |
|---|---|
| **Availability** | 1-2 days |
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Lyophilized |
| **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** | P51178 |
| **Applications** | Western Blot : 0.25-0.5ug/ml<br>Flow Cytometry : 1-3ug/million cells<br>ELISA : 0.1-0.5ug/ml |
| **Limitations** | This PLCD1 antibody is available for research use only. |




Flow Cytometry analysis of 293T cells using anti-PLCD1 antibody. Overlay histogram showing 293T cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-PLCD1 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 PLCD1 using anti-PLCD1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat lung tissue lysates, Lane 2: rat heart tissue lysates, Lane 3: mouse lung tissue lysates, Lane 4: mouse heart 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-PLCD1 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. A specific band was detected for PLCD1 at approximately 86 kDa. The expected molecular weight of PLCD1 is ~86 kDa.

## Description

PLCD1 antibody detects Phospholipase C delta 1, a signaling enzyme that hydrolyzes phosphatidylinositol 4,5-bisphosphate (PIP2) into secondary messengers inositol trisphosphate (IP3) and diacylglycerol (DAG). The UniProt recommended name is Phospholipase C delta 1 (PLCD1). This enzyme participates in calcium signaling and regulates diverse cellular processes such as growth, differentiation, and cytoskeletal reorganization.

Functionally, PLCD1 antibody identifies a 756-amino-acid enzyme containing an N-terminal PH domain for membrane binding, EF-hand motifs for calcium interaction, a catalytic X-Y domain for phosphodiesterase activity, and a C2 domain for phospholipid association. Upon receptor stimulation, PLCD1 catalyzes the cleavage of PIP2, generating IP3 to release intracellular calcium and DAG to activate protein kinase C (PKC).

The PLCD1 gene is located on chromosome 3p22.3 and is expressed in epithelial tissues, brain, and smooth muscle. It functions downstream of receptor tyrosine kinases and G protein-coupled receptors to mediate signal transduction. PLCD1 contributes to actin cytoskeleton remodeling and cell migration through localized phosphoinositide metabolism.

Pathologically, downregulation or mutation of PLCD1 is associated with cancer progression, skin disorders, and developmental defects. PLCD1 acts as a tumor suppressor in certain epithelial cancers by modulating calcium signaling and cell adhesion. Research using PLCD1 antibody supports studies in signal transduction, lipid metabolism, and cell communication.

PLCD1 antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect phospholipase enzymes in signaling pathways. NSJ Bioreagents provides PLCD1 antibody reagents optimized for cell signaling, cancer research, and phosphoinositide biology.

Structurally, Phospholipase C delta 1 contains catalytic and regulatory domains that coordinate substrate recognition and calcium-dependent activity. This antibody facilitates investigation of PLCD1's role in intracellular signaling and calcium homeostasis.

## Application Notes

Optimal dilution of the PLCD1 antibody should be determined by the researcher.

## Immunogen

E.coli-derived human PLCD1 recombinant protein (Position: Q14-R549) was used as the immunogen for the PLCD1 antibody.

## Storage

After reconstitution, the PLCD1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at

-20oC. Avoid repeated freezing and thawing.