

# PLC $\gamma$ 1 (1249): sc-81

## BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a crucial role in the initiation of receptor mediated signal transduction through the generation of the two second messengers, inositol 1,4,5-triphosphate and diacylglycerol from phosphatidylinositol 4,5-bisphosphate. There are many mammalian PLC isozymes, including PLC  $\beta$ 1, PLC  $\beta$ 2, PLC  $\beta$ 3, PLC  $\beta$ 4, PLC  $\gamma$ 1, PLC  $\gamma$ 2, PLC  $\delta$ 1, PLC  $\delta$ 2 and PLC  $\epsilon$ . PLC  $\gamma$ 1 is widely distributed in bronchiolar epithelium, type I and II pneumocytes and fibroblasts of the interstitial tissue. Actin-regulatory protein Villin is tyrosine phosphorylated and associates with PLC  $\gamma$ 1 in the brush border of intestinal epithelial cells. Villin regulates PLC  $\gamma$ 1 activity by modifying its own ability to bind phosphatidylinositol 4,5-bisphosphate. PLC  $\gamma$ 1 binds Integrin  $\alpha$ 1/ $\beta$ 1 and modulates Integrin  $\alpha$ 1/ $\beta$ -specific adhesion. PLC  $\gamma$ 1 and  $\text{Ca}^{2+}$  play a direct role in VEGF-regulated endothelial growth, however this signaling pathway is not linked to FGF-mediated effects in primary endothelial cells. PLC  $\gamma$ 1 is rapidly activated in response to growth factor stimulation and plays an important role in regulating cell proliferation and differentiation, and may have a protective function during cellular response to oxidative stress.

## CHROMOSOMAL LOCATION

Genetic locus: PLCG1 (human) mapping to 20q12; Plcg1 (mouse) mapping to 2 H2.

## SOURCE

PLC  $\gamma$ 1 (1249) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of PLC  $\gamma$ 1 of bovine origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-81 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PLC  $\gamma$ 1 (1249) is recommended for detection of PLC  $\gamma$ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PLC  $\gamma$ 1 (1249) is also recommended for detection of PLC  $\gamma$ 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PLC  $\gamma$ 1 siRNA (h): sc-29452, PLC  $\gamma$ 1 siRNA (m): sc-36265, PLC  $\gamma$ 1 shRNA Plasmid (h): sc-29452-SH, PLC  $\gamma$ 1 shRNA Plasmid (m): sc-36265-SH, PLC  $\gamma$ 1 shRNA (h) Lentiviral Particles: sc-29452-V and PLC  $\gamma$ 1 shRNA (m) Lentiviral Particles: sc-36265-V.

Molecular Weight of PLC  $\gamma$ 1: 155 kDa.

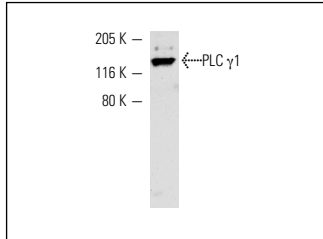
## RESEARCH USE

For research use only, not for use in diagnostic procedures.

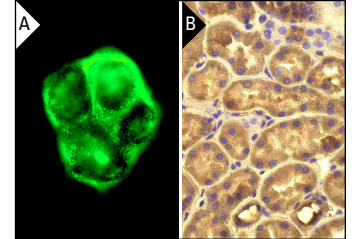
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



PLC  $\gamma$ 1 (1249): sc-81. Western blot analysis of PLC  $\gamma$ 1 expression in A-431 whole cell lysate.



PLC  $\gamma$ 1 (1249): sc-81. Immunofluorescence staining of methanol-fixed A-431 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

## SELECT PRODUCT CITATIONS

- Diakonova, M., et al. 1995. Epidermal growth factor induces rapid and transient association of phospholipase C  $\gamma$ 1 with EGF-receptor and filamentous Actin at membrane ruffles of A-431 cells. *J. Cell Sci.* 108: 2499-2509.
- Xu, S., et al. 2009. Phospholipase C  $\gamma$ 2 is critical for Dectin-1-mediated  $\text{Ca}^{2+}$  flux and cytokine production in dendritic cells. *J. Biol. Chem.* 284: 7038-7046.
- Mingueneau, M., et al. 2009. Loss of the LAT adaptor converts antigen-responsive T cells into pathogenic effectors that function independently of the T cell receptor. *Immunity* 31: 197-208.
- Hu, X.L., et al. 2011. Conditional deletion of NRSF in forebrain neurons accelerates epileptogenesis in the kindling model. *Cereb. Cortex.* 21: 2158-2165.
- Ramakrishnan, P., et al. 2011. Anti-apoptotic effect of hyperglycemia can allow survival of potentially autoreactive T cells. *Cell Death Differ.* 18: 690-699.
- Meyer, R.D., et al. 2011. PEST motif serine and tyrosine phosphorylation controls vascular endothelial growth factor receptor 2 stability and down-regulation. *Mol. Cell. Biol.* 31: 2010-2025.
- San Luis, B., et al. 2011. Sts-2 is a phosphatase that negatively regulates  $\zeta$ -associated protein (ZAP)-70 and T cell receptor signaling pathways. *J. Biol. Chem.* 286: 15943-15954.


 MONOS  
Satisfation  
Guaranteed

Try **PLC  $\gamma$ 1 (E-12): sc-7290** or **PLC  $\gamma$ 1 (H-3): sc-166938**, our highly recommended monoclonal alternatives to PLC  $\gamma$ 1 (1249). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PLC  $\gamma$ 1 (E-12): sc-7290**.