

PLC γ 1 (H-3): sc-166938

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a critical 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 β 1, PLC β 2, PLC β 3, PLC β 4, PLC γ 1, PLC γ 2, PLC δ 1, PLC δ 2 and PLC ϵ . PLC γ 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 γ 1 in the brush border of intestinal epithelial cells. Villin regulates PLC γ 1 activity by modifying its own ability to bind phosphatidylinositol 4,5-bisphosphate. PLC γ 1 binds Integrin α 1/ β 1 and modulates Integrin α 1/ β -specific adhesion. PLC γ 1 and 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 γ 1 is rapidly activated in response to growth factor stimulation and plays an important role in regulating cell proliferation and differentiation. It may also 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 γ 1 (H-3) is a mouse monoclonal antibody raised against amino acids 530-850 of PLC γ 1 of rat origin.

PRODUCT

Each vial contains 200 μg IgG κ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PLC γ 1 (H-3) is recommended for detection of PLC γ 1 p145 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg 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).

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

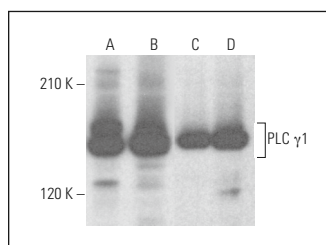
Molecular Weight of PLC γ 1: 155 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or KNRK whole cell lysate: sc-2214.

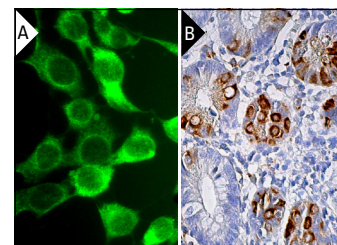
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PLC γ 1 (H-3): sc-166938. Western blot analysis of PLC γ 1 expression in HeLa (A), Jurkat (B), 3T3-L1 (C) and KNRK (D) whole cell lysates.



PLC γ 1 (H-3): sc-166938. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of subset of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Cao, C., et al. 2013. Impairment of TrkB-PSD-95 signaling in Angelman syndrome. *PLoS Biol.* 11: e1001478.
2. Leonard, M.K., et al. 2019. The metastasis suppressor NME1 inhibits melanoma cell motility via direct transcriptional induction of the Integrin β -3 gene. *Exp. Cell Res.* 374: 85-93.
3. Lee, Y.T., et al. 2019. Compound C inhibits B16-F1 tumor growth in a syngeneic mouse model via the blockage of cell cycle progression and angiogenesis. *Cancers* 11: 823.
4. Lee, M., et al. 2022. Compound C inhibits renal epithelial carcinoma growth in syngeneic mouse models by blocking cell cycle progression, adhesion and invasion. *Int. J. Mol. Sci.* 23: 9675.

RESEARCH USE

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



See **PLC γ 1 (E-12): sc-7290** for PLC γ 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.