SANTA CRUZ BIOTECHNOLOGY, INC.

PLC γ1 (N-20): sc-31748

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 β1, PLC β2, PLC β3, PLC β4, PLC γ1, PLC γ2, PLC δ1, PLC δ2 and PLC ε. PLC γ1 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 γ1 in the brush border of intestinal epithelial cells. Villin regulates PLC γ1 activity by modifying its own ability to bind phosphatidylinositol 4,5-biphosphate. PLC γ1 binds Integrin α1/β1 and modulates Integrin α1/β-specific adhesion. PLC γ1 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 γ1 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.

REFERENCES

1. Suh, P., et al. 1988. Inositol phospholipid-specific phospholipase C: complete cDNA and protein sequences and sequence homology to tyrosine kinase-related oncogene products. Proc. Natl. Acad. Sci. USA 85: 5419-5423.
2. Emori, Y., et al. 1989. A second type of rat phosphoinositide-specific phospholipase C containing a Src-related sequence not essential for phosphoinositide-hydrolyzing activity. J. Biol. Chem. 264: 21885-21890.
3. Meldrum, E., et al. 1991. A second gene product of the inositol-phospholipid-specific phospholipase Cδ subclass. Eur. J. Biochem. 196: 159-165.

CHROMOSOMAL LOCATION

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

SOURCE

PLC γ1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PLC γ1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-31748 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

PLC γ1 (N-20) is recommended for detection of PLC γ1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

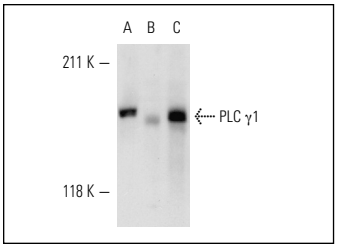
PLC γ1 (N-20) is also recommended for detection of PLC γ1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PLC γ1 siRNA (h): sc-29452, PLC γ1 siRNA (m): sc-36265, PLC γ1 shRNA Plasmid (h): sc-29452-SH, PLC γ1 shRNA Plasmid (m): sc-36265-SH, PLC γ1 shRNA (h) Lentiviral Particles: sc-29452-V and PLC γ1 shRNA (m) Lentiviral Particles: sc-36265-V.

Molecular Weight of PLC γ1: 155 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, KNRK whole cell lysate: sc-2214 or A-431 whole cell lysate: sc-2201.

DATA



PLC γ1 (N-20): sc-31748. Western blot analysis of PLC γ1 expression in A-431 (**A**), NIH/3T3 (**B**) and KNRK (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cheng, S., et al. 2011. Putative breast tumor suppressor TACC2 suppresses the aggressiveness of breast cancer cells through a PLCγ pathway. Curr. Signal Transduct. Ther. 6: 55-64.
2. Sun, P.H., et al. 2012. Protein tyrosine phosphatase µ (PTP µ or PTPRM), a negative regulator of proliferation and invasion of breast cancer cells, is associated with disease prognosis. PLoS ONE 7: e50183.
3. Zhang, Y., et al. 2014. Expression of breast cancer metastasis suppressor-1, BRMS-1, in human breast cancer and the biological impact of BRMS-1 on the migration of breast cancer cells. Anticancer Res. 34: 1417-1426.