SANTA CRUZ BIOTECHNOLOGY, INC.

p-PLC γ1 (Tyr 1253)-R: sc-22141-R

BACKGROUND

Phospholipase C γ1 (PLC γ1) is an isozyme of the phosphoinositide-specific PLC family, which occupies a central role in hormonal signal transduction pathways and is a substrate for the epidermal growth factor receptor tyrosine kinase. Following activation of Trk B, PLC γ1 is phosphorylated on Tyrosine 783, Tyrosine 771 and Tyrosine 1253. Tyrosine 783 lies just downstream of the kinase domain in a relatively short sequence motif characteristic of the Trk family of protein-tyrosine kinase receptors. The sequence around Tyrosine 783 fits a consensus sequence for binding PLC γ1. PLC γ1 also forms a complex with Trk B consistent with the possibility that one of the Trk B auto-phosphorylation sites provides a binding site for the PLC γ1 SH2 domains, as is the case for other receptor protein-tyrosine kinases.

REFERENCES

1. Wahl, M.I., et al. 1990. Identification of two epidermal growth factor-sensitive tyrosine phosphorylation sites of phospholipase C γ in intact HSC-1 cells. J. Biol. Chem. 265: 3944-3948.
2. Kim, H.K., et al. 1991. PDGF stimulation of inositol phospholipid hydrolysis requires PLC γ1 phosphorylation on tyrosine residues 783 and 1254. Cell 65: 435-441.

CHROMOSOMAL LOCATION

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

SOURCE

p-PLC γ1 (Tyr 1253)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 1253 phosphorylated 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-22141 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-PLC γ1 (Tyr 1253)-R is recommended for detection of Tyr 1253 phosphorylated 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).

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.

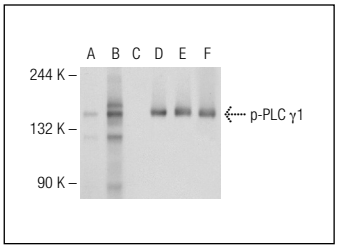
Molecular Weight of p-PLC γ1: 155 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of PLC γ1 phosphorylation in untreated (**A**,**D**), pervanadate treated (**B**,**E**) and pervanadate and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-PLC γ1 (Tyr 1253)-R: sc-22141-R (**A**,**B**,**C**) and PLC γ1 (E-12): sc-7290 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Cheng, S., et al. 2011. Putative breast tumor suppressor TACC2 suppresses the aggressiveness of breast cancer cells through aPLCγ pathway. Curr. Signal Transduct. Ther. 5: 55-64.
2. Hu, X.L., et al. 2011. Conditional deletion of NRSF in forebrain neurons accelerates epileptogenesis in the kindling model. Cereb. Cortex 21: 2158-2165.
3. Lattanzio, R., et al. 2013. Overexpression of activated phospholipase Cγ1 is a risk factor for distant metastases in T1-T2, N0 breast cancer patients undergoing adjuvant chemotherapy. Int. J. Cancer 132: 1022-1031.
4. 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.

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.