

# p-PLC $\gamma$ 1 (Tyr 1253): sc-12944

## BACKGROUND

Phospholipase C  $\gamma$ 1 (PLC  $\gamma$ 1) 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  $\gamma$ 1 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  $\gamma$ 1. PLC  $\gamma$ 1 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  $\gamma$ 1 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  $\gamma$  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  $\gamma$ 1 phosphorylation on tyrosine residues 783 and 1254. *Cell* 65: 435-441.
3. Carpenter, G., et al. 1992. Growth factor phosphorylation of PLC  $\gamma$ 1. *Ciba Found. Symp.* 164: 223-233.
4. Middlemas, D.S., et al. 1994. Identification of Trk B autophosphorylation sites and evidence that phospholipase C  $\gamma$ 1 is a substrate of the Trk B receptor. *J. Biol. Chem.* 269: 5458-5466.
5. Guiton, M., et al. 1994. Identification of *in vivo* brain-derived neurotrophic factor-stimulated autophosphorylation sites on the Trk B receptor tyrosine kinase by site-directed mutagenesis. *J. Biol. Chem.* 269: 30370-30377.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-PLC  $\gamma$ 1 (Tyr 1253) is available as either goat (sc-12944) or rabbit (sc-12944-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Tyr 1253 phosphorylated PLC  $\gamma$ 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12944 P, (100  $\mu$ g 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.

## APPLICATIONS

p-PLC  $\gamma$ 1 (Tyr 1253) is recommended for detection of Tyr 1253 phosphorylated 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

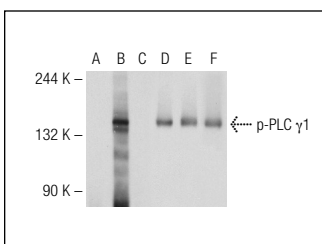
p-PLC  $\gamma$ 1 (Tyr 1253) is also recommended for detection of correspondingly phosphorylated PLC  $\gamma$ 1 in additional species, including equine, canine, bovine and porcine.

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 p-PLC  $\gamma$ 1: 155 kDa.

Positive Controls: NIH/3T3 + PMA cell lysate: sc-24748 or Jurkat whole cell lysate: sc-2204.

## DATA



Western blot analysis of PLC  $\gamma$ 1 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  $\gamma$ 1 (Tyr 1253)-R: sc-12944-R (**A,B,C**) and PLC  $\gamma$ 1 (E-12): sc-7290 (**D,E,F**).

## SELECT PRODUCT CITATIONS

1. Jimenez-Vergara, A.C., et al. 2011. Influence of glycosaminoglycan identity on vocal fold fibroblast behavior. *Acta Biomater.* 7: 3964-3972.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.