

#2821 Store at -20°C

Phospho-PLC γ 1 (Tyr783) Antibody

- Small 100 μ l (10 western blots)
- Large 300 μ l (30 western blots)



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This product is for *in vitro* research use only and is not intended for use in humans or animals. This product is not intended for use as a therapeutic or in diagnostic procedures.

| Applications | Species Cross-Reactivity* | Molecular Wt. | Source |
|--------------------|---------------------------|---------------|----------|
| W, F Endogenous | H, M, R | 155 kDa | Rabbit** |

Background: Phosphoinositide-specific phospholipase C (PLC) plays a significant role in transmembrane signaling. In response to extracellular stimuli such as hormones, growth factors and neurotransmitters, PLC hydrolyzes phosphatidylinositol 4,5-bisphosphate (PIP₂) to generate two secondary messengers: inositol 1,4,5-triphosphate (IP₃) and diacylglycerol (DAG) (1). At least four families of PLCs have been identified: PLC β , PLC γ , PLC δ and PLC ϵ . The PLC β subfamily includes four members, PLC β 1-4. All four members of the subfamily are activated by α - or β - γ -subunits of the heterotrimeric G-proteins (2,3).

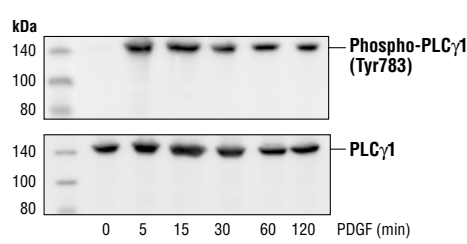
Phosphorylation is one of the key mechanisms that regulates the activity of PLC. Phosphorylation of Ser1105 by PKA or PKC inhibits PLC β 3 activity (4,5). Ser537 of PLC β 3 is phosphorylated by CaMKII, and this phosphorylation may contribute to the basal activity of PLC β 3. PLC γ is activated by both receptor and nonreceptor tyrosine kinases (6).

PLC γ forms a complex with EGF and PDGF receptors, which leads to the phosphorylation of PLC γ at Tyr771, 783 and 1245 (7). Phosphorylation by Syk at Tyr783 activates the enzymatic activity of PLC γ 1 (8).

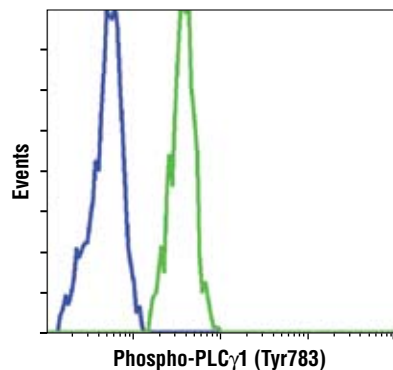
Specificity/Sensitivity: Phospho-PLC γ 1 (Tyr783) Antibody detects PLC γ 1 only when phosphorylated at Tyr783. It does not cross-react with phosphorylated PLC γ 2 or other PLCs.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phospho-peptide (KLH-coupled) corresponding to residues surrounding Tyr783 of human PLC γ 1. Antibodies are purified by protein A and peptide affinity chromatography.

Selected Application References:
 Moore, A.L. et al. (2002). *J. Biol. Chem.* 277, 34030-34035. Applications: W, IC-IF.



Western blot analysis of extracts from NIH/3T3 cells, untreated or PDGF-stimulated for the indicated times using Phospho-PLC γ 1 (Tyr783) Antibody (upper) or PLC γ 1 Antibody #2822 (lower).



Flow cytometric analysis of NIH3T3 cells, untreated (blue) or PDGF treated (green) using Phospho-PLC γ 1 (Tyr783) Antibody.

Background References:

- (1) Singer, W.D. et al. (1997) *Annu. Rev. Biochem.* 66, 475-509.
- (2) Smrcka, A.V. et al. (1991) *Science* 251, 804-807.
- (3) Taylor, S. J. et al. (1991) *Nature* 350, 516-518.
- (4) Yue, C. et al. (1998) *J. Biol. Chem.* 273, 18023-18027.
- (5) Yue, C. et al. (2000) *J. Biol. Chem.* 275, 30220-30225.
- (6) Margolis, B. et al. (1989) *Cell* 57, 1101-1107.
- (7) Kim, H.K. et al. (1991) *Cell* 65, 435-441.
- (8) Wang, Z. et al. (1998) *Mol. Cell. Biol.* 18, 590-597.

Entrez-Gene ID #5335
Swiss-Prot Acc. #P19174

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

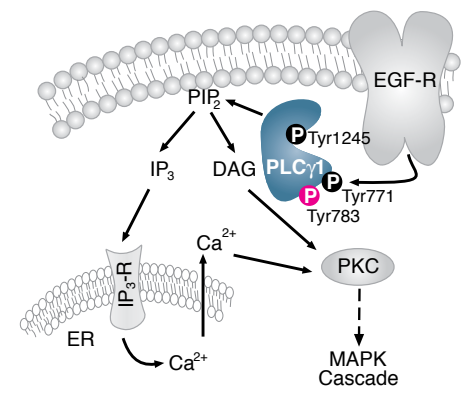
***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:
 Western Blotting 1:1000
 Flow Cytometry 1:25

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.



IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.