

#3874 Store at -20°C

# Phospho-PLC $\gamma$ 2 (Tyr759) Antibody

✓ 100  $\mu$ l  
(10 western blots)



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rev. 04/26/10

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID # 5336  
Swiss-Prot Acc. # P16885

Applications W Endogenous	Species Cross-Reactivity*		Molecular Wt. 150 kDa	Source Rabbit**
	H	M		

**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 (PIP<sub>2</sub>) to generate two secondary messengers: inositol 1,4,5-triphosphate (IP<sub>3</sub>) and diacylglycerol (DAG) (1). At least four families of PLCs have been identified: PLC $\beta$ , PLC $\gamma$ , PLC $\delta$  and PLC $\epsilon$ . The PLC $\beta$  subfamily includes four members, PLC $\beta$ 1-4. All four members of the subfamily are activated by  $\alpha$ - or  $\beta$ - $\gamma$ -subunits of the heterotrimeric G-proteins (2,3).

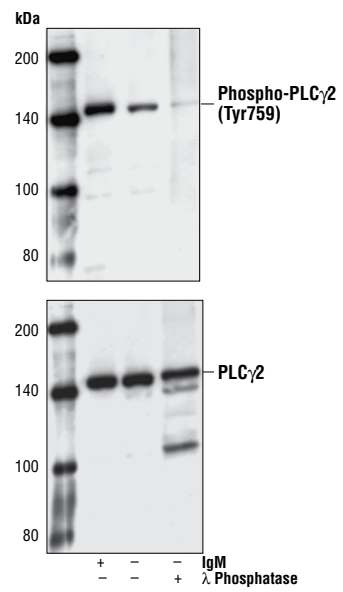
Phosphorylation is one of the key mechanisms that regulates the activity of PLC. Phosphorylation of Ser1105 by PKA or PKC inhibits PLC $\beta$ 3 activity (4,5). Ser537 of PLC $\beta$ 3 is phosphorylated by CaMKII, and this phosphorylation may contribute to the basal activity of PLC $\beta$ 3. PLC $\gamma$  is activated by both receptor and nonreceptor tyrosine kinases (6). PLC $\gamma$  forms a complex with EGF and PDGF receptors, which leads to the phosphorylation of PLC $\gamma$ 1 at Tyr771, 783 and 1245 (7). Phosphorylation by Syk at Tyr783 activates the enzymatic activity of PLC $\gamma$ 1 (8).

PLC $\gamma$ 2 is engaged in antigen-dependent signaling in B cells and collagen-dependent signaling in platelets. Phosphorylation by Btk or Lck at tyrosines 753, 759, 1197 and 1217 is correlated with PLC $\gamma$ 2 activity (9,10).

**Specificity/Sensitivity:** Phospho-PLC $\gamma$ 2 (Tyr759) Antibody detects endogenous levels of PLC $\gamma$ 2 only when phosphorylated at tyrosine 759. The antibody does not cross-react with phosphorylated PLC $\gamma$ 1.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phospho-peptide (KLH-coupled) corresponding to residues surrounding Tyr759 of human PLC $\gamma$ 2. Antibodies are purified by protein A and peptide affinity chromatography.

- 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.



Western blot analysis of extracts from untreated or anti-human IgM treated Ramos cells or  $\lambda$  phosphatase-treated Ramos cell lysates, using Phospho-PLC $\gamma$ 2 (Tyr759) Antibody (upper) or PLC $\gamma$ 2 Antibody #3872 (lower).

- (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.
- (9) Watanabe, D. et al. (2001) *J. Biol. Chem.* 276, 38595-38601.
- (10) Ozdener, F. et al. (2002) *Mol. Pharmacol.* 62, 672-679.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ 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

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://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.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebra fish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% sequence homology.