

Phospho-PLC γ 2 (Tyr1217) Antibody

100 μ l
 (10 western blots)

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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.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	150 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).

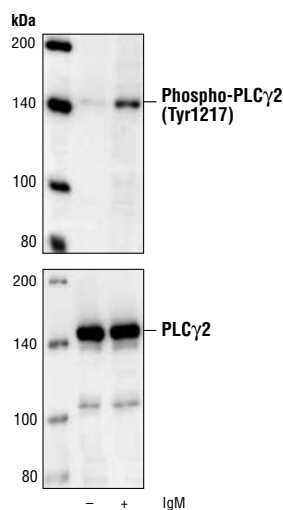
Phosphorylation is one of the key mechanisms that regulates the activity of PLC. Phosphorylation of Ser1105 by PKA or PKC inhibits PLC β 3 activity (4,5). Ser537 of PLC β 3 is phosphorylated by CaMKII, and this phosphorylation may contribute to the basal activity of PLC β 3. PLC γ is activated by both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

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

Specificity/Sensitivity: Phospho-PLC γ 2 (Tyr1217) Antibody detects endogenous levels of PLC γ 2 phosphorylated at Tyr1217. This antibody does not cross-react with phosphorylated PLC γ 1.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1217 of human PLC γ 2. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from Ramos cells, untreated or treated with anti-human IgM using Phospho-PLC γ 2 (Tyr1217) Antibody (upper) or PLC γ 2 Antibody #3872 (lower).

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

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

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.

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

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—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.