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Store at -20C  
#2821

## Phospho-PLC $\gamma$ 1 (Tyr783) Antibody

For Research Use Only. Not for Use in Diagnostic Procedures.

<b>Applications:</b> W	<b>Reactivity:</b> H M R	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 155	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #P19174	<b>Entrez-Gene Id:</b> 5335
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### Product Usage Information

#### Application

Western Blotting

#### Dilution

1:1000

### 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.

### Specificity/Sensitivity

Phospho-PLC $\gamma$ 1 (Tyr783) Antibody detects PLC $\gamma$ 1 only when phosphorylated at tyrosine 783. It does not cross-react with phosphorylated PLC $\gamma$ 2 or other PLCs.

### Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding tyrosine 783 of human PLC $\gamma$ 1. Antibodies are purified by protein A and peptide affinity chromatography.

### 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 $\gamma$  at Tyr771, 783 and 1248 (7). Phosphorylation by Syk at Tyr783 activates the enzymatic activity of PLC $\gamma$ 1 (8).

### Background References

1. Singer, W.D. et al. (1997) *Annu Rev Biochem* 66, 475-509.
2. Smrcka, A.V. et al. (1991) *Science* 251, 804-7.
3. Taylor, S.J. et al. (1991) *Nature* 350, 516-8.
4. Yue, C. et al. (1998) *J Biol Chem* 273, 18023-7.
5. Yue, C. et al. (2000) *J Biol Chem* 275, 30220-5.
6. Margolis, B. et al. (1989) *Cell* 57, 1101-7.
7. Kim, H.K. et al. (1991) *Cell* 65, 435-41.
8. Wang, Z. et al. (1998) *Mol Cell Biol* 18, 590-7.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Western Blot Buffer

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

### Applications Key

**W:** Western Blotting

### Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat

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