Revision 1

Store at -20C

#2481

Phospho-PLCbeta3 (Ser537) Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	150	Rabbit	#Q01970	5331

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

Phospho-PLCBeta3 (Ser537) Antibody detects endogenous levels of PLCbeta3 only when phosphorylated at serine 537. The antibody does not cross-react with phosphorylated PLCbeta1, PLCbeta2, PLCbeta4 or other PLCs.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding residues surrounding Ser537 of human PLCbeta3. 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 (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: PLCβ, PLCγ, PLCδ and PLCε. The PLCβ subfamily includes four members, PLCβ1-4. 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 PLCβ3 activity (4,5). Ser537 of PLCβ3 is phosphorylated by CaMKII, and this phosphorylation may contribute to the basal activity of PLCβ3. PLCγ is activated by both receptor and nonreceptor tyrosine kinases (6).
PLCγ forms a complex with EGF and PDGF receptors, which leads to the phosphorylation of PLCγ at Tyr771, 783 and 1248 (7). Phosphorylation by Syk at Tyr783 activates the enzymatic activity of PLCγ1 (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

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Limited Uses

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