Revision 1

Store at -20C

#12022

Phospho-PDGF Receptor α (Tyr762) 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, IP	H	Endogenous	190	Rabbit	#P16234	5156

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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-PDGF Receptor α (Tyr762) Antibody recognizes endogenous levels of PDGF receptor α protein only when phosphorylated at Tyr762. This antibody does not cross-react with endogenous levels of phosphorylated PDGF receptor β protein.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr762 of human PDGF receptor α protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Platelet derived growth factor (PDGF) family proteins exist as several disulphide-bonded, dimeric isoforms (PDGF AA, PDGF AB, PDGF BB, PDGF CC, and PDGF DD) that bind in a specific pattern to two closely related receptor tyrosine kinases, PDGF receptor α (PDGFRα) and PDGF receptor β (PDGFRβ). PDGFRα and PDGFRβ share 75% to 85% sequence homology between their two intracellular kinase domains, while the kinase insert and carboxy-terminal tail regions display a lower level (27% to 28%) of homology (1). PDGFRα homodimers bind all PDGF isoforms except those containing PDGF D. PDGFRβ homodimers bind PDGF BB and DD isoforms, as well as the PDGF AB heterodimer. The heteromeric PDGF receptor α/β binds PDGF B, C, and D homodimers, as well as the PDGF AB heterodimer (2). PDGFRα and PDGFRβ can each form heterodimers with EGFR, which is also activated by PDGF (3). Various cells differ in the total number of receptors present and in the receptor subunit composition, which may account for responsive differences among cell types to PDGF binding (4). Ligand binding induces receptor dimerization and autophosphorylation, followed by binding and activation of cytoplasmic SH2 domain-containing signal transduction molecules, such as GRB2, Src, GAP, PI3 kinase, PLCγ, and NCK. A number of different signaling pathways are initiated by activated PDGF receptors and lead to control of cell growth, actin reorganization, migration, and differentiation (5).
Phosphorylation of PDGFRα at Tyr762 was identified at Cell Signaling Technology using PTMScan®, our LC-MS/MS platform for phosphorylation site discovery (6). Tyr762 is located in the activation loop of the PDGFRα kinase domain. Phosphorylation of PDGFRα at this site was also reported by several other labs to be a docking site for CrkII and CrkL upon induction by growth factor treatment (7,8).

Background References

1. Deuel, T.F. et al. (1988) *Biofactors* 1, 213-7.
2. Bergsten, E. et al. (2001) *Nat Cell Biol* 3, 512-6.
3. Betsholtz, C. et al. (2001) *Bioessays* 23, 494-507.
4. Coughlin, S.R. et al. (1988) *Prog Clin Biol Res* 266, 39-45.
5. Ostman, A. and Heldin, C.H. (2001) *Adv Cancer Res* 80, 1-38.
6. Rikova, K. et al. (2007) *Cell* 131, 1190-203.
7. Matsumoto, T. et al. (2000) *Biochem Biophys Res Commun* 270, 28-33.
8. Yokote, K. et al. (1998) *Oncogene* 16, 1229-39.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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