

#3124 Store at -20°C

Phospho-PDGF Receptor β (Tyr1009) (42F9) Rabbit mAb

✓ 100 μ l
(10 western blots)



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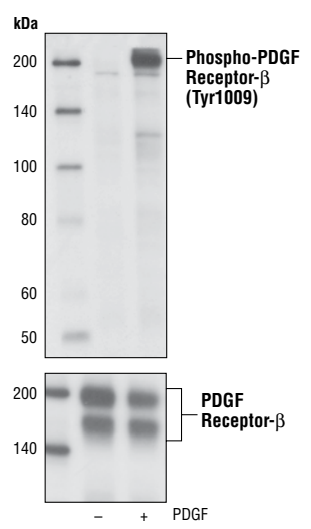
rev. 07/16/10

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.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	H, M	190 kDa	Rabbit IgG**

Background: The proteins of the platelet derived growth factor (PDGF) family 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 (PDGFR α) and PDGF receptor β (PDGFR β). PDGFR α and PDGFR β 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). PDGF Receptor α homodimers bind all PDGF isoforms except those containing PDGF D. PDGF Receptor β homodimers bind PDGF BB and DD isoforms, as well as the PDGF AB heterodimer. The heteromeric PDGF α / β receptor binds PDGF B, C, and D homodimers as well as the PDGF AB heterodimer (2). PDGFR α and PDGFR β 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, PLC γ 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). Tyr751 in the kinase-insert region of PDGFR β is the docking site for PI3 kinase (6). Phosphorylated pentapeptides derived from Tyr751 of PDGFR β (pTyr751-Val-Pro-Met-Leu) inhibit the association of the carboxy-terminal SH2 domain of the p85 subunit of PI3 kinase with PDGFR β (7). Tyr740 is also required for PDGFR β mediated PI3 kinase activation (8).

Activation of the PDGFR β leads to autophosphorylation on a number of tyrosine residues, including Tyr1009. Mutation analysis has shown that PDGF-stimulated PLC γ signaling is dependent on autophosphorylation of the PDGFR β at Tyr1009 and Tyr1021 (9). Phosphorylated Tyr1009 also serves as a binding site for SHP-2, a SH2 domain-containing tyrosine phosphatase that is tyrosine-phosphorylated by PDGFR β (10).



Western blot analysis of cell extracts from NIH/3T3 cells unstimulated or stimulated with PDGF-BB (100 ng/ml for 5 min), using Phospho-PDGF Receptor- β (Tyr1009) (42F9) Rabbit mAb (upper) or PDGF receptor- β (2B3) Mouse mAb #3175 (lower).

Specificity/Sensitivity: Phospho-PDGF Receptor β (Tyr1009) (42F9) Rabbit mAb detects endogenous levels of PDGF receptor β only when phosphorylated at Tyr1009. The antibody may slightly cross-react with other activated PDGF receptor family members and other activated protein tyrosine kinases.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1009 of human PDGF receptor β .

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. 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
Immunoprecipitation	1:50

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) Deuel, T.F. et al. (1988) *Biofactors* 1, 213-217.
- (2) Bergsten, E. et al. (2001) *Nat. Cell Biol.* 3, 512-516.
- (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) Panayotou, G. et al. (1992) *EMBO J.* 11, 4261-4272.
- (7) Ramalingam, K. et al. (1995) *Bioorg. Med. Chem.* 3, 1263-1272.
- (8) Kashishian, A. et al. (1992) *EMBO J.* 11, 1373-1382.
- (9) Rönstrand, L. et al. (1992) *EMBO J.* 11, 3911-3919.
- (10) Rönstrand, L. et al. (1999) *Oncogene* 18, 3696-3702.

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.

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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.