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 (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). PDGF Receptor α homodimers bind all PDGF isoforms except those containing PDGF D. PDGF Receptor β homodimers bind PDGFBB and DD isoforms, as well as the PDGFB heterodimer. The heteromeric PDGFRαβ receptor binds PDGFB, B, C, and D homodimers as well as the PDGFB 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, PLCγ and Nck. A number of different signaling pathways are initiated by activated PDGFRα receptors and lead to control of cell growth, actin reorganization, migration and differentiation (5). Tyr751 in the kinase-insert region of PDGFRβ is the docking site in the kinase-insert region of PDGFRβ that binds in a specific pattern to two different signaling pathways are initiated by activated PDGFRα receptors and lead to control of cell growth, actin reorganization, migration and differentiation (5). Tyr751 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, PLCγ and Nck. A number of different signaling pathways are initiated by activated PDGFRα receptors and lead to control of cell growth, actin reorganization, migration and differentiation (5). Tyr751 in the kinase-insert region of PDGFRβ is the docking site in the kinase-insert region of PDGFRβ that binds in a specific pattern to two

Recommended Antibody Dilutions:
Western blotting 1:1000
Immunoprecipitation 1:50
Immunohistochemistry (Paraffin) 1:100†
Unmasking buffer: EDTA
Antibody diluent: SignalStain® Antibody Diluent #8112
Detection reagent: SignalStain® Boost (HRP, Rabbit) #8114
Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.
Immunohistochemistry (Frozen) 1:100
Fixative: 3% Formaldehyde
Immunofluorescence (IF-IC) 1:100

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:

**Anti-rabbit secondary antibodies must be used to detect this antibody.

**Species cross-reactivity is determined by western blot.

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 Mm — Human Mk — Mouse Mm — Rat C — Chicken Dm — D. melanogaster X — Xenopus Z — Zebrafish B — Bovine

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.
Confocal immunofluorescent analysis of NIH/3T3 cells, serum-starved (left) or PDGF-treated (right), using PDGF Receptor β (28E1) Rabbit mAb (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Immunohistochemical analysis of paraffin-embedded human colon carcinoma using PDGF Receptor β (28E1) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human glioblastoma using PDGF Receptor β (28E1) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded U-87MG cells, showing membrane localization, using PDGF Receptor β (28E1) Rabbit mAb.