SANTA CRUZ BIOTECHNOLOGY, INC.

p-PDGFR-β (Tyr 751)-R: sc-21902-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Platelet Derived Growth Factor (PDGF) is a mitogen for mesenchyme- and glia-derived cells. PDGF consists of two chains, A and B, which dimerize to form functionally distinct isoforms, PDGF-AA, PDGF-AB, and PDGF-BB. These three isoforms bind with different affinities to two receptor types, α and β, which are endowed with protein tyrosine kinase domains and undergo either homo- or heterodimerization as a consequence of ligand binding. Ligand stimulation of PDGFR-β leads to autophosphorylation at Tyr 857, which is the major autophosphorylation site, and Tyr 751, which is the major *in vitro* phosphorylation site. Autophosphorylation of Tyr 751, which lies in the kinase insert region, is required for binding of phosphatidylinositol-3 kinase to the receptor. These auto-phosphorylation events largely contribute to signal transduction through the PDGF receptor.

REFERENCES

1. Ross, R., et al. 1986. The biology of platelet-derived growth factor. Cell 46: 155-169.
2. Hart, C.E., et al. 1988. Two classes of PDGF receptor recognize different isoforms of PDGF. Science 240: 1529-1531.
3. Heldin, C., et al. 1988. Binding of different dimeric forms of PDGF to human fibroblasts: evidence for two separate receptor types. EMBO J. 7: 1387-1393.
4. Kazlauskas, A. et al. 1989. Autophosphorylation of the PDGF receptor in the kinase insert region regulates interactions with cell proteins. Cell 58: 1121-1133.
5. Kelly, J.D., et al. 1991. Platelet-derived growth factor (PDGF) stimulates PDGF receptor subunit dimerization and intersubunit *trans*-phosphorylation. J. Biol. Chem. 266: 8987-8992.
6. Nishimura, R., et al. 1993. Two signaling molecules share a phosphotyrosine-containing binding site in the platelet-derived growth factor receptor. Mol. Cell. Biol. 13: 6889-6896.

CHROMOSOMAL LOCATION

Genetic locus: PDGFRB (human) mapping to 5q33.1; Pdgfrb (mouse) mapping to 18 E1.

SOURCE

p-PDGFR-β (Tyr 751)-R is an affinity purified rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 751 of PDGFR-β of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21902 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

p-PDGFR-β (Tyr 751)-R is recommended for detection of Tyr 751 phosphorylated PDGFR-β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

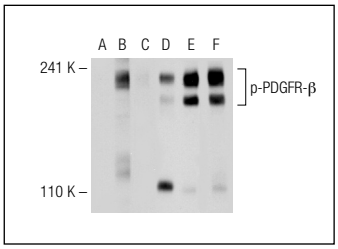
p-PDGFR-β (Tyr 751)-R is also recommended for detection of correspondingly phosphorylated Tyr on PDGFR-β in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PDGFR-β siRNA (h): sc-29442, PDGFR-β siRNA (m): sc-36200, PDGFR-β shRNA Plasmid (h): sc-29442-SH, PDGFR-β shRNA Plasmid (m): sc-36200-SH, PDGFR-β shRNA (h) Lentiviral Particles: sc-29442-V and PDGFR-β shRNA (m) Lentiviral Particles: sc-36200-V.

Molecular Weight of p-PDGFR-β: 190 kDa.

Positive Controls: CCD-1064Sk + PDGF cell lysate: sc-2264 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Western blot analysis of PDGFR-β phosphorylation in untreated (**A**,**D**), PDGF treated (**B**,**E**) and PDGF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) NIH/3T3 whole cell lysates. Antibodies tested include p-PDGFR-β (Tyr 751)-R: sc-21902-R (**A**,**B**,**C**) and PDGFR-β (11H4): sc-80991 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Liao, J., et al. 2006. Growth factor-dependent AKT activation and cell migration requires the function of c-K(B)-Ras versus other cellular ras isoforms. J. Biol. Chem. 281: 29730-29738.
2. Chen, C.N., et al. 2006. Synergistic roles of platelet-derived growth factor-BB and interleukin-1β in phenotypic modulation of human aortic smooth muscle cells. Proc. Natl. Acad. Sci. USA 103: 2665-2670.
3. Ball, S.G., et al. 2010. Neuropilin-1 regulates platelet-derived growth factor receptor signalling in mesenchymal stem cells. Biochem. J. 427: 29-40.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.