SANTA CRUZ BIOTECHNOLOGY, INC.

p-PDGFR-β (Tyr 579): sc-135671

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, PGDF-AA, PDGF-AB and PDGF-BB. These three isoforms bind with different affinities to two receptor types, PDGFR-α and -β, which are endowed with protein tyrosine kinase domains. PDGFR-α can bind to both A and B subunits of PDGF, while PDGFR-β can only bind the B subunit. Ligand binding promotes either homo- or heterodimerization of the PDGF receptors in a specific manner. PDGF-AA induces the dimerization of two α receptors, PDGF-AB induces dimerization of αα and αβ and PDGF-BB induces the formation of three types of dimers, αα, αβ and ββ. Translocation of the PDGFR-β gene with the TEL gene is linked to chronic myelomono-cytic leukemia (CMML), a myelodysplastic syndrome and demonstrates the oncogenic potential of the PDGF receptors. Both mouse and human PDGFR-β are subject to phosphorylation on specific amino acid residues, such as Tyr 579.

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.H., et al. 1989. Dimerization of B-type platelet-derived growth factor receptors occurs after ligand binding and is closely associated with receptor kinase activation. J. Biol. Chem. 264: 8905-8912.
4. Thornton, D.E., et al. 1991. Characterization of the 5q-breakpoint in an acute nonlymphocytic leukemia patient using pulsed-field gel eletrophoresis. Am. J. Med. Genet. 41: 557-565.
5. Duan, D.S., et al. 1991. A functional soluble extracellular region of the platelet-derived growth factor (PDGF) β receptor antagonizes PDGF-stimulated responses. J. Biol. Chem. 266: 413-418.
6. Kaji, K. 1992. Function, molecular structure and gene expression regulation of platelet-derived growth factor. Nippon Rinsho 50: 1902-1909.
7. Golub, T.R., et al. 1994. Fusion of PDGF receptor β to a novel Ets-like gene, TEL, in chronic myelomonocytic leukemia with t(5;12) chromosomal translocation. Cell 77: 307-316.
8. Craven, R.J., et al. 1995. Receptor tyrosine kinases expressed in metastatic colon cancer. Int. J. Cancer 60: 791-797.

CHROMOSOMAL LOCATION

Genetic locus: PDGFRB (human) mapping to 5q32; Pdgfrb (mouse) mapping to 18 E1.

SOURCE

p-PDGFR-β (Tyr 579) is an affinity purified rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 579 phosphorylated PDGFR-β of human origin.

PRODUCT

Each vial contains IgG in 100 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

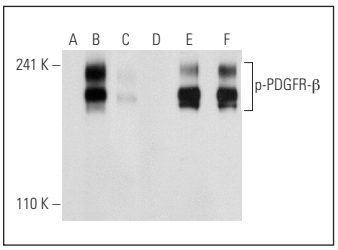
p-PDGFR-β (Tyr 579) is recommended for detection of Tyr 579 phosphorylated PDGFR-β of human origin and correspondingly Tyr 578 phosphorylated PDGFR-β of mouse origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

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.

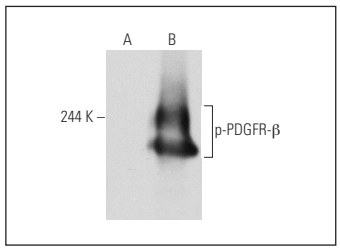
Molecular Weight of p-PDGFR-β: 190 kDa.

Positive Controls: PDGFR-β (h2): 293T Lysate: sc-159386, NIH/3T3 whole cell lysate: sc-2210 or CCD-1064Sk + PDGF cell lysate: sc-2264.

DATA



Western blot analysis of PDGFR-β phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated human PDGFR-β transfected: sc-159386 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated human PDGFR-β transfected: sc-159386 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-PDGFR-β (Tyr 579): sc-135671 (**A**,**B**,**C**) and PDGFR-β (11H4): sc-80991 (**D**,**E**,**F**).



p-PDGFR-β (Tyr 579): sc-135671. Western blot analysis of PDGFR-β phosphorylation in non-transfected: sc-117752 (**A**) and human PDGFR-β transfected: sc-159386 (**B**) 293T whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.