SANTA CRUZ BIOTECHNOLOGY, INC.

PDGFR-β (M-20): sc-1627

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Platelet derived growth factor (PDGF) is a mitogen for mesenchyme- and glia-derived cells. It consists of two disulfide-bonded polypeptide chains, A and B, and occurs as three isoforms, PDGF-AA, PDGF-AB, and PDGF BB. The three isoforms bind with different affinities to two receptor types, α and β, which are structurally related and possess protein-tyrosine kinase domains. Ligand binding induces activation of the receptor kinases by formation of receptor dimers; the A subunit of PDGF binds only to α receptors with high affinity, whereas the B subunit can bind to both α and β receptors. Evidence suggests that PDGF may function as a neurotrophic factor; PDGF type α receptors are expressed in oligodendrocyte progenitor cells whereas PDGF type β receptors are expressed on neurons, suggesting that the different isoforms of PDGF may regulate growth and differentiation of different cell types in the developing central nervous system by paracrine and autocrine routes.

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. Seifert, R.A., et al. 1989. Two different subunits associate to create isoform-specific platelet-derived growth factor receptors. J. Biol. Chem. 264: 8771- 8778.
5. Heldin, C., 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.
6. Bishayee, S., et al. 1989. Ligand-induced dimerization of the platelet-derived growth factor receptor. J. Biol. Chem. 264: 11699-11705.
7. Smits, A., et al. 1991. Neurotrophic activity of platelet-derived growth factor (PDGF): rat neuronal cells possess functional PDGF β-type receptors and respond to PDGF. Proc. Natl. Acad. Sci. USA 88: 8159-8163.

CHROMOSOMAL LOCATION

Genetic locus: PDGFRB (human) mapping to 5q31-q35; Pdgfrb (mouse) mapping to 18 E1.

SOURCE

PDGFR-β (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PDGFR-β of mouse 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-1627 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PDGFR-β (M-20) is recommended for detection of PDGF receptor type β of mouse, rat and, to a lesser extent, 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for and PDGFR-β siRNA (m): sc-36200.

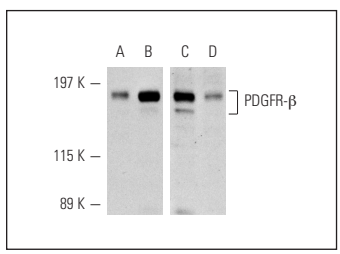
Molecular Weight of PDGFR-β: 180-185 kDa.

Positive Controls: 3611-RF whole cell lysate: sc-2215.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of PDGFR-β expression in rodent 3611-RF (**A**,**C**) and human CCD-1064Sk (**B**,**D**) fibroblast cell lines. Antibodies tested include PDGFR-β (P-20)-G: sc-339-G (**A**,**B**) and PDGFR-β (M-20): sc-1627 (**C**,**D**).

SELECT PRODUCT CITATIONS

1. Hammes, H.P., et al. 2002. Pericytes and the pathogenesis of diabetic retinopathy. Diabetes 51: 3107-3112.

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.