

PDGFR- β (BG-4): sc-4032

BACKGROUND

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, A and B, 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 A receptors with high affinity, whereas the B subunit can bind to both A and B receptors. Evidence suggests that PDGF may function as a neurotrophic factor. The fact that PDGF type A receptors are expressed in oligodendrocyte progenitor cells whereas PDGF type B receptors are expressed on neurons suggests 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., Raines, E.W., and Bowen-Pope, D.F. 1986. The biology of platelet-derived growth factor. *Cell* 46: 155-169.
2. Hart, C.E., Forstrom, J.W., Kelly, F.D., Smith, R.A., Ross, R., Murray, M.J., and Bowen-Pope, D.F. 1988. Two classes of PDGF receptor recognize different isoforms of PDGF. *Science* 240: 1529-1531.
3. Heldin, C., Backstrom, G., Ostman, A., Hammacher, A., Ronnstrand, L., Rubin, K., Nister, M., and Westermark, B. 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., Hart, C.E., Philips, P.E., Forstrom, J.W., Ross, R., Murray, M.J., and Bowen-Pope, D.F. 1989. Two different subunits associate to create isoform-specific platelet-derived growth factor receptors. *J. Biol. Chem.* 264: 8771-8778.
5. Heldin, C., Ernlund, A., Rorsman, C., and Rönstrand, L. 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., Majumdar, S., Khire, J., and Das, M. 1989. Ligand-induced dimerization of the platelet-derived growth factor receptor. *J. Biol. Chem.* 264: 11699-11705.
7. Smits, A., Kato, M., Westermark, B., Nister, M., Heldin, C., and Funa, K. 1991. Neurotrophic activity of platelet-derived growth factor (PDGF): rat neural cells possess functional PDGF B-type receptors and respond to PDGF. *Proc. Natl. Acad. Sci. USA* 88: 8159-8163.

SOURCE

PDGFR- β (BG-4) is expressed in *E. coli* as a 50 kDa tagged fusion protein corresponding to amino acids 958-1106 of PDGFR- β protein of human origin.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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

PRODUCT

PDGFR- β (BG-4) is purified from bacterial lysates (>98%) by glutathione agarose chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

Available as a Western blotting control; 10 μ g in 0.1 ml SDS-PAGE loading buffer, PDGFR- β (BG-4): sc-4032 WB.

APPLICATIONS

PDGFR- β (BG-4) is suitable as a Western blotting control for sc-339 and sc-432.