

PDGF-A (m): 293T Lysate: sc-122461

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, α and β , which are structurally related and endowed with 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. The fact that receptors for PDGF-A are expressed in oligodendrocyte progenitor cells whereas receptors for PDGF-B 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. Rorsman, F., Bywater, M., Knott, T.J., Scott, J. and Betsholtz, C. 1988. Structural characterization of the human platelet-derived growth factor A-chain cDNA and gene: alternative exon usage predicts two different precursor proteins. *Mol. Cell. Biol.* 8: 571-577.
2. Bonthron, D.T., Morton, C.C., Orkin, S.H. and Collins, T. 1988. Platelet-derived growth factor A chain: gene structure, chromosomal location, and basis for alternative mRNA splicing. *Proc. Natl. Acad. Sci. USA* 85: 1492-1496.
3. Andersson, M., Ostman, A., Bäckström, G., Hellman, U., George-Nascimento, C., Westermark, B. and Heldin, C.H. 1992. Assignment of interchain disulfide bonds in platelet-derived growth factor (PDGF) and evidence for agonist activity of monomeric PDGF. *J. Biol. Chem.* 267: 11260-11266.
4. Perros, F., Montani, D., Dorfmueller, P., Durand-Gassel, I., Tcherakian, C., Le Pavec, J., Mazmanian, M., Fadel, E., Mussot, S., Mercier, O., Hervé, P., Emilie, D., Eddahibi, S., Simonneau, G., Souza, R. and Humbert, M. 2008. Platelet-derived growth factor expression and function in idiopathic pulmonary arterial hypertension. *Am. J. Respir. Crit. Care Med.* 178: 81-88.
5. Soroceanu, L., Akhavan, A. and Cobbs, C.S. 2008. Platelet-derived growth factor- α receptor activation is required for human cytomegalovirus infection. *Nature* 455: 391-395.
6. Karvinen, H., Rutanen, J., Leppänen, O., Lach, R., Levonen, A.L., Eriksson, U. and Ylä-Herttuala, S. 2009. PDGF-C and -D and their receptors PDGFR- α and PDGFR- β in atherosclerotic human arteries. *Eur. J. Clin. Invest.* 39: 320-327.
7. Frost, E.E., Zhou, Z., Krasnesky, K. and Armstrong, R.C. 2009. Initiation of oligodendrocyte progenitor cell migration by a PDGF-A activated extracellular regulated kinase (ERK) signaling pathway. *Neurochem. Res.* 34: 169-181.
8. Kowarik, M., Onofri, C., Colaco, T., Stalla, G.K. and Renner, U. 2010. Platelet-derived growth factor (PDGF) and PDGF receptor expression and function in folliculostellate pituitary cells. *Exp. Clin. Endocrinol. Diabetes* 118: 113-120.

CHROMOSOMAL LOCATION

Genetic locus: *Pdgfa* (mouse) mapping to 5 G2.

PRODUCT

PDGF-A (m): 293T Lysate represents a lysate of mouse PDGF-A transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

PDGF-A (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PDGF-A antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.