SANTA CRUZ BIOTECHNOLOGY, INC.

PDGF-B (hBA-108): sc-4948

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 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 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-A receptors are expressed in oligodendrocyte progenitor cells, whereas PDGF-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., 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. 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.-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.
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 neural cells possess functional PDGF B-type receptors and respond to PDGF. Proc. Natl. Acad. Sci. USA. 88: 8159-8163.

CHROMOSOMAL LOCATION

Genetic locus: PDGFB (human) mapping to 22q12.3-q13.1; Pdgfb (mouse) mapping to 15 E.

SOURCE

PDGF-B (hBA-108) is produced in *E. coli* as 39 kDa biologically active, tagged fusion protein corresponding to 108 amino acids of PDGF-B of human origin.

PRODUCT

PDGF-B (hBA-108) is purified from bacterial lysates (>98%); supplied as 50 µg purified protein.

RESEARCH USE

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

BIOLOGICAL ACTIVITY

PDGF-B (hBA-108) is biologically active as determined by the dose-dependent stimulation of thymidine uptake by Balb/c 3T3 cells is < 1 ng/ml, corresponding to a specific activity of > 1 x 10^6 units/mg.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

Store desiccated at -20° C. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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