Cytokines

Human Recombinant PDGF-AB

Platelet-derived growth factor AB

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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
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Catalog #	78096	10 µg
	78096.1	100 µg
	78096.2	1000 µg

Product Description

Platelet-derived growth factor (PDGF) is a dimeric glycoprotein consisting of two disulfide bridge stabilized polypeptide chains, A and B, which are assembled as heterodimers (PDGF-AB) or homodimers (PDGF-AA and PDGF-BB) (Fretto et al.; Westermark & Heldin). PDGF signals through the receptor tyrosine kinases PDGFRalpha and PDGFRbeta. It has been shown that PDGF-induced migration involves signaling pathways involving MEK/ERK, EGFR, Src and PI3K/Akt (Kim et al.). PDGF is a potent mitogen for cells of mesenchymal origin such as fibroblasts, glial cells, and vascular smooth muscle cells. PDGF has been implicated in pathogenesis of atherosclerosis, glomerulonephritis, cancer, and in the contraction of vascular smooth muscle cells of rat aortic tissues (Fretto et al.; Sachinidis et al.). It has been shown that PDGF-AB together with 5-Azacytidine (Catalog #72012) induce the conversion of mature bone and fat cells into tissue-regenerative multipotent stem cells (Chandrakanthan et al.).

Product Information

Alternative Names:	GDGF, Glioma-derived growth factor, ODGF, Osteosarcoma-derived growth factor, Platelet-derived growth factor-AB
Accession Number:	A chain: P04085; B chain: P01127
Amino Acid Sequence:	Alpha chain: MSIEEAVPAV CKTRTVIYEI PRSQVDPTSA NFLIWPPCVE VKRCTGCCNT SSVKCQPSRV HHRSVKVAKV EYVRKKPKLK EVQVRLEEHL ECACATTSLN PDYREEDTGR PRESGKKRKR KRLKPT Beta chain: MSLGSLTIAE PAMIAECKTR TEVFEISRRL IDRTNANFLV WPPCVEVQRC SGCCNNRNVQ CRPTQVQLRP VQVRKIEIVR KKPIFKKATV TLEDHLACKC ETVAAARPVT
Predicted Molecular Mass:	14.4 kDa alpha monomer, 12.4 kDa beta monomer; 26.8 kDa dimer
Species:	Human
Cross Reactivity:	Rat
Formulation:	Lyophilized from a sterile filtered aqueous solution containing sodium phosphate, pH 7.5.
Source:	E. coli

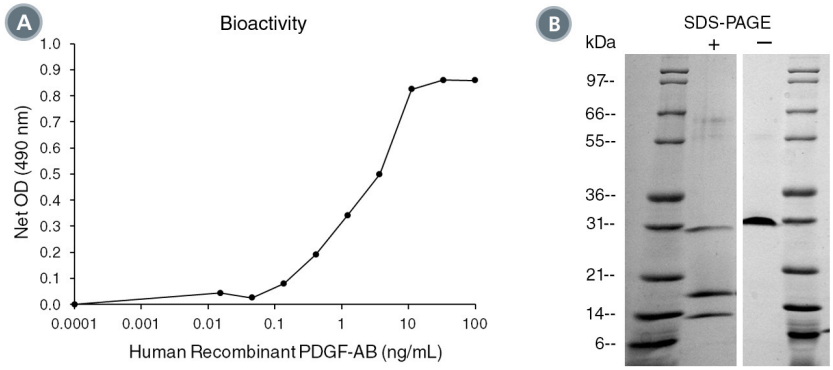
Specifications

Activity:	The specific activity is ≥ 5 x 10^4 units/mg (EC50 ≤ 20 ng/mL) as determined by a cell proliferation assay of BALB/c 3T3 cells.
Purity:	≥ 95 %
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately BSA is not required.

Data



(A) The biological activity of Human Recombinant PDGF-AB was tested by its ability to promote the proliferation of BALB/c 3T3 cells. Cell proliferation was measured after 46 hours using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is less than 1.8 ng/mL.
(B) 1 µg of Human Recombinant PDGF-AB was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant PDGF-AB is a heterodimer of one 14.4 kDa alpha-chain and 12.4 kDa beta-chain with a predicted total molecular mass of 26.8 kDa.

Related Products

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References

Chandrakanthan V et al. (2016) PDGF-AB and 5-Azacytidine induce conversion of somatic cells into tissue-regenerative multipotent stem cells. Proc Natl Acad Sci U S A 113(16): E2306–15.
Fretto LJ et al. (1993) Mechanism of platelet-derived growth factor (PDGF) AA, AB, and BB binding to alpha and beta PDGF receptor. J Biol Chem 268(5): 3625–31.
Sachinidis A et al. (1990) The platelet-derived growth factor isomers, PDGF-AA, PDGF-AB and PDGF-BB, induce contraction of vascular smooth muscle cells by different intracellular mechanisms. FEBS Lett 275(1-2): 95–8.
Westermark B & Heldin CH. (1993) Platelet-derived growth factor. Structure, function and implications in normal and malignant cell growth. Acta Oncol 32(2): 101–5.

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