

Cytokines

Human Recombinant PDGF-BB



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Platelet-derived growth factor BB

Catalog #	78097	10 µg
	78097.1	100 µg
	78097.2	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.). PDGF-BB is secreted by osteoblasts to induce mesenchymal stem cell migration and angiogenesis. It has also been shown that PDGF-BB is secreted by preosteoclasts during bone modeling and remodeling to induce angiogenesis and thus proper osteogenesis (Xie et al.).

Product Information

Alternative Names:	GDGF, Glioma-derived growth factor, ODGF, Osteosarcoma-derived growth factor, Platelet-derived growth factor-BB
Accession Number:	P01127
Amino Acid Sequence:	MSLGSLTIAE PAMIAECKTR TEVFEISRRL IDRTNANFLV WPPCVEVQRC SGCCNNRNVQ CRPTQVQLRP VQVRKIEIVR KKPIFKKATV TLEDHLACKC ETVAARPV
Predicted Molecular Mass:	12.4 kDa monomer; 24.9 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

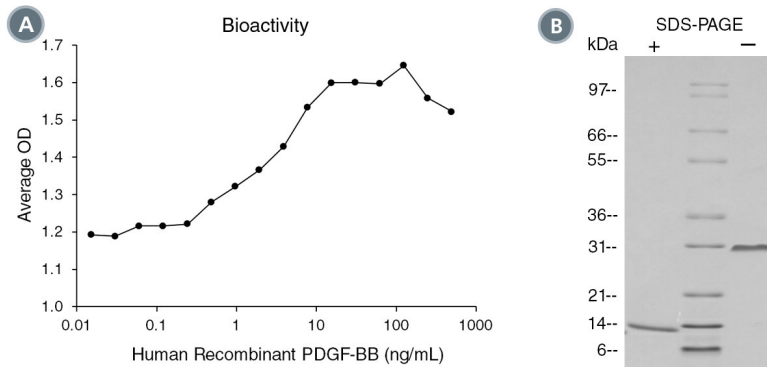
Activity:	The specific activity is $\geq 5 \times 10^4$ units/mg ($EC_{50} \leq 20$ ng/mL) as determined by a cell proliferation assay using NR6R-3T3 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

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. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant PDGF-BB was tested by its ability to promote the proliferation of NR6R-3T3 cells. Cell proliferation was measured 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 2.12 ng/mL.

(B) 1 µg of Human Recombinant PDGF-BB was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant PDGF-BB is a homodimer of 12.4 kDa subunits with a predicted total molecular mass of 24.9 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- 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.
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- 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.
- Westermarck B & Heldin CH. (1993) Platelet-derived growth factor. Structure, function and implications in normal and malignant cell growth. *Acta Oncol* 32(2): 101–5.
- Xie H et al. (2014) PDGF-BB secreted by preosteoclasts induces angiogenesis during coupling with osteogenesis. *Nat Med* 20(11): 1270–8.

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