

Cytokines

Mouse Recombinant PDGF-BB



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Platelet-derived growth factor BB

Catalog # 78178
78178.1

10 µg
100 µg

Product Description

The platelet-derived growth factor (PDGF) family has five heparin-binding members that assemble into four homodimers (PDGF-AA, PDGF-BB, PDGF-CC, and PDGF-DD) and one heterodimer (PDGF-AB; Fretto et al.; Li & Eriksson). PDGF signals through the receptor tyrosine kinases PDGFR α and PDGFR β . 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, ODGF, Platelet-derived growth factor
Accession Number: Q03366
Amino Acid Sequence: MSLGSLAAAE PAVIAECKTR TEVFQISRNL IDRTNANFLV WPPCVEVQRC SGCCNNRNVQ CRASQVQMRP VQVRKIEIVR KKPIFKKATV TLEDHLACKC ETIVTPRPVT
Predicted Molecular Mass: 12.4 kDa monomer; 24.6 kDa dimer
Species: Mouse
Cross Reactivity: Reported to be species-specific
Formulation: Lyophilized from a sterile filtered solution containing sodium citrate, pH 3.0.
Source: E. coli

Specifications

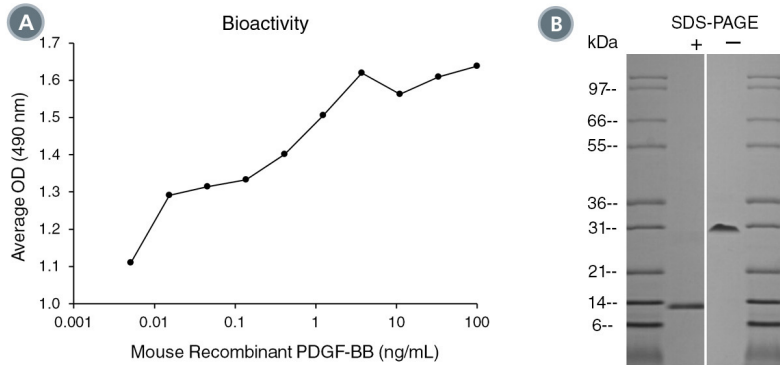
Activity: The specific activity is $\geq 5 \times 10^5$ units/mg ($EC_{50} \leq 2$ ng/mL) as determined by a cell proliferation assay using BALB/c 3T3 cells.
Purity: $\geq 95\%$
Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein.

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 -20°C to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant PDGF-BB was tested by its ability to promote the proliferation of BALB/c 3T3 cells. Cell proliferation was measured after 40 hours of culture 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 example above is 0.25 ng/mL.

(B) 1 μ g of Mouse Recombinant PDGF-BB was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant PDGF-BB has a predicted molecular mass of 24.6 kDa (12.4 kDa per monomer).

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

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- Li X & Eriksson U. (2003) Novel PDGF family members: PDGF-C and PDGF-D. *Cytokine Growth Factor Rev* 14(2): 91–8.
- 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.
- 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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