

Cytokines

Human Recombinant PDGF-AB, ACF

Platelet-derived growth factor, animal
component-free



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Catalog # 78153
78153.1
78153.2

10 µg
100 µg
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. PDGF-induced migration has been shown to involve MEK/ERK, EGFR, Src, and PI3K/Akt signaling pathways (Kim et al.). PDGF is a potent mitogen for cells of mesenchymal origin- like 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.). This product is animal component-free.

Product Information

Alternative Names: GDGF, Glioma-derived growth factor, ODGF, Osteosarcoma-derived growth factor
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 0.1% trifluoroacetic acid
Source: E. coli

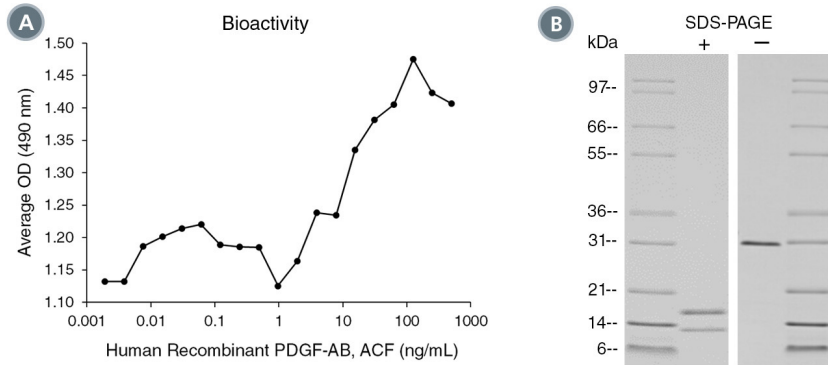
Specifications

Activity: The specific activity is $\geq 5.0 \times 10^4$ units/mg ($EC_{50} \leq 20$ ng/mL) as determined by proliferation of 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. 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-AA, ACF was tested by its ability to promote the proliferation of NR6R-3T3 cells. Cell proliferation was measured after 46 hours in 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 12.9 ng/mL.

(B) 1 µg of Human Recombinant PDGF-AA, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

Related Products

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

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 USA* 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.
- Kim SJ et al. (2007) Differential effect of FGF and PDGF on cell proliferation and migration in osteoblastic cells. *Growth Factors* 25(2): 77–86.
- 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.

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