Cytokines

Human Recombinant PDGF-CC

Platelet-derived growth factor CC

Catalog #	78168	10 µg
	78168.1	50 µg

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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; Li & Eriksson). PDGF signals through the receptor tyrosine kinases PDGFRα and PDGFRβ. 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 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-CC is secreted as a latent growth factor and requires activation by proteolytic processing (Li & Eriksson). PDGF-CC binds to PDGFRα homodimers and PDGFRαβ heterodimers, but not to PDGFRβ homodimers (Li & Eriksson). PDGF-CC is an angiogenic factor that stimulates coronary artery smooth muscle cell proliferation and plays a role in cardiovascular development (Gilbertson et al.). PDGF-CC is also expressed in many tumors and plays a role in tumorigenesis (Zwerner & May).

Product Information

Alternative Names:	PDGF, Platelet-derived growth factor
Accession Number:	NP_057289
Amino Acid Sequence:	VVDLNLLTEE VRLYSCTPRN FSVSIREELK RTDTIFWPGC LLVKRCGGNC ACCLHNCNEC QCVPSKVTKK YHEVLQLRPK TGVRGLHKSL TDVALEHHEE CDCVCRGSTG G
Predicted Molecular Mass:	12.5 kDa
Species:	Human
Cross Reactivity:	Reported to be species-specific
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	HEK293

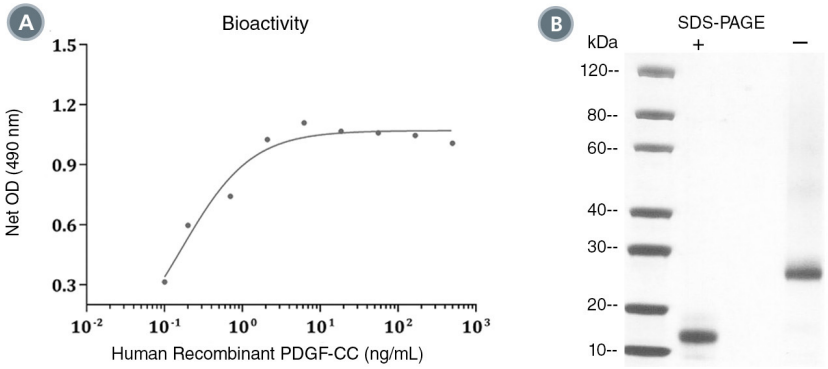
Specifications

Activity:	The specific activity is ≥ 1.0 x 10^6 units/mg (EC50 ≤ 1 ng/mL) as determined by a cell proliferation assay using 3T3 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water or phosphate-buffered saline 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 week or at -20°C to -80°C for more than 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant PDGF-CC was tested by its ability to promote the proliferation of 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 example above is less than 1 ng/mL.
(B) 5 µg of Human Recombinant PDGF-CC was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant PDGF-CC has a predicted molecular mass of 12.5 kDa.

Related Products

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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.
Gilbertson DG et al. (2001) Platelet-derived growth factor C (PDGF-C), a novel growth factor that binds to PDGF alpha and beta receptor. J Biol Chem 276(29): 27406–14.
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.
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.
Zwerner JP & May WA. (2001) PDGF-C is an EWS/FLI induced transforming growth factor in Ewing family tumors. Oncogene 20(5): 626–33.