Cytokines

Human Recombinant PDGF-AA

Platelet-derived growth factor AA

Catalog #	78095	10 µg
	78095.1	100 µg
	78095.2	500 µg
	78095.3	1000 µg

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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 suggested that PDGF-AA is an important autocrine regulator of vascular endothelial growth factor (VEGF) expression in non-small cell lung carcinomas (Shikada et al.). PDGF-AA also mediates proliferation of oligodendrocyte progenitor cells and oligodendrocyte lineage differentiation through the activation of extracellular signal-regulated kinases 1 and 2 (ERK1/2) (Hu et al.). PDGF-AA is commonly used to differentiate human pluripotent stem cell (hPSC)-derived neural progenitor cells into oligodendrocyte precursor cells (Piao et al.).

Product Information

Alternative Names:	GDGF, Glioma-derived growth factor, ODGF, Osteosarcoma-derived growth factor, Platelet-derived growth factor-AA
Accession Number:	P04085
Amino Acid Sequence:	MSIEEAVPAV CKTRTVIYEI PRSQVDPTSA NFLIWPPCVE VKRCTGCCNT SSVKCQPSRV HHRSVKVAKV EYVRKKPKLK EVQVRLEEHL ECACATTSLN PDYREEDTGR PRESGKKRKR KRLKPT
Predicted Molecular Mass:	14.4 kDa monomer; 28.9 kDa dimer
Species:	Human
Cross Reactivity:	Rat
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

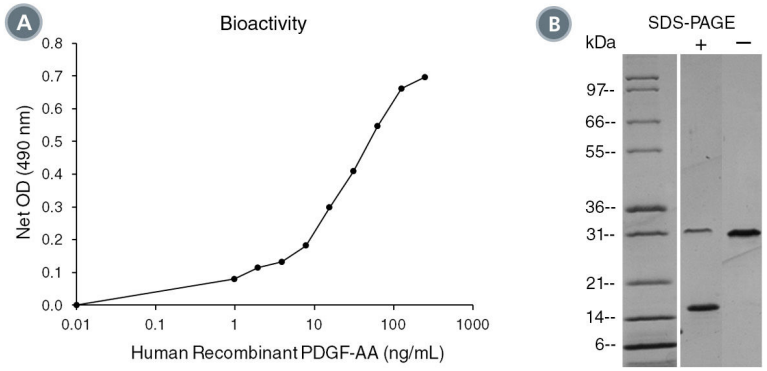
Specifications

Activity:	The specific activity is ≥ 2 x 10^4 units/mg (EC50 ≤ 50 ng/mL) as determined by a cell proliferation assay using 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. 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-AA 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 21 ng/mL.
(B) 1 µg of Human Recombinant PDGF-AA was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant PDGF-AA is a homodimer of 14.4 kDa subunits with a predicted total molecular mass of 28.9 kDa.

Related Products

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References

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