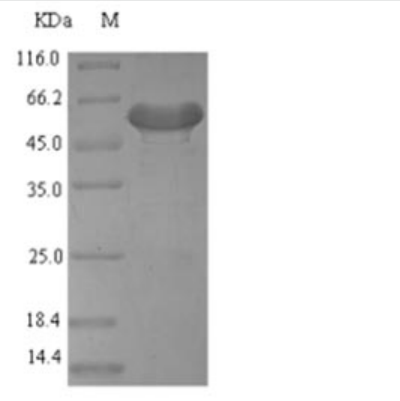
Recombinant Mouse Platelet-derived growth factor D (Pdgfd)

Product Code	CSB-EP852889MO
Relevance	Growth factor that plays an essential role in the regulation of embryonic development, cell proliferation, cell migration, survival and chemotaxis. Potent mitogen for cells of mesenchymal origin. Plays an important role in wound healing (By similarity). Has oncogenic potential and can induce tumor formation. Induces macrophage recruitment, increased interstitial pressure, and blood vessel maturation during angiogenesis. Can initiate events that lead to a mesangial proliferative glomerulonephritis, including influx of monocytes and macrophages and production of Extracellular domain matrix.
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q925I7
Alias	Spinal cord-derived growth factor B Short name: SCDGF-B Cleaved into the following 2 chains: Platelet-derived growth factor D, latent form Short name: PDGFD latent form Platelet-derived growth factor D, receptor-binding form Short name: PDGFD receptor-binding form
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	TPQRASIKALRNANLRRDESNHLTDLYQREENIQVTSNGHVQSPRFPNSYPRN LLLTWWLRSQEKTRIQLSFDHQFGLEEAENDICRYDFVEVEEVSESSTVVRGR WCGHKEIPPRITSRTNQIKITFKSDDYFVAKPGFKIYYSFVEDFQPEAASETNW ESVTSSFSGVSYHSPSITDPTLTADALDKTVAEFDTVEDLLKHFNPVSWQDDL ENLYLDTPHYRGRSYHDRKSKVDLDRLNDDVKRYSCTPRNHSVNLREELKLT NAVFFPRCLLVQRCGGNCGCGTVNWKSCTCSSGKTVKKYHEVLKFEPGHFK RRGKAKNMALVDIQLDHHERCDCICSSRPPR
Lead Time	3-7 business days
Research Area	Others
Source	E.coli
Gene Names	Pdgfd
Expression Region	24-370aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged

Mol. Weight	56.2kDa
Protein Description	Full Length of Mature Protein

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The recombinant mouse Pdgfd protein is co-expressed with an N-terminal 6xHis-SUMO tag in E. coli. The Pdgfd gene fragment (24-370aa) with the N-terminal 6xHis-SUMO tag gene is cloned into a suitable vector, which is transfected into E.coli cells. E.coli cells are induced to express the Pdgfd protein following the addition of IPTG. The Pdgfd protein is purified using Ni-NTA affinity chromatography. After elution, the purified recombinant Pdgfd protein is analyzed using SDS-PAGE to obtain a purity greater than 90%.

Mouse Pdgfd is secreted as a disulfide-bonded dimer and primarily signals through the PDGFR-β [1][2]. It has been implicated in several physiological and pathological conditions, including vascular remodeling, fibrosis, and tumor progression.

In the context of vascular biology, Pdgfd has been shown to induce significant changes in vascular smooth muscle cells (vSMCs), leading to conditions such as cardiac fibrosis and atherosclerosis [3][4]. Specifically, studies have demonstrated that overexpression of Pdgfd in transgenic mouse models results in enhanced proliferation of vSMCs, which contributes to the thickening of the vessel wall and subsequent cardiovascular complications [3][5]. Furthermore, Pdgfd has been associated with mesangial cell proliferation in renal glomerulopathy, indicating its role in kidney disease [6][7].

Pdgfd has been recognized for its involvement in tumor biology. It has been shown to promote tumor growth and invasion in various cancer models, including prostate and endometrial cancers [8][9]. In prostate cancer, Pdgfd not only enhances tumor cell proliferation but also facilitates interactions with the surrounding stroma, which is critical for tumor progression [10]. Additionally, Pdgfd has been linked to glioma pathogenesis, where it contributes to tumor growth and angiogenesis [11][12]. The signaling pathways activated by Pdgfd are complex and involve various downstream effects, including the activation of matrix metalloproteinases, which are crucial for extracellular matrix remodeling and tumor metastasis [9][13].

References:

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Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.