Recombinant Human PDGF-BB Protein

Product Name

Recombinant Human PDGF-BB Protein

Size/Catalog Number

50μg / GMP-TL644-0050

100μg / GMP-TL644-0100

Product Information

Synonyms: Platelet-derived growth factor subunit B, PDGF-2, Platelet-derived growth factor beta polypeptide, Proto-oncogene c-Sis

Accession: Uniprot P01127

Expressed Region: Ser82-Thr190

Tag: C-terminal 6×His-tag

Expression system: HEK293 cells

Predicted Molecular weight: 13.1 kDa

Purity: > 90% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 μg of protein (LAL method)

Form： Lyophilized from sterile 20mM phosphate-buffered saline (PBS), pH 7.4, normally containing 6–8% (w/v) mannitol as protectant.

Background

The recombinant human PDGF-BB-His fusion protein is a high-purity homodimeric growth factor produced in HEK-293 expression systems, featuring a C-terminal polyhistidine tag for nickel-affinity chromatography purification. As a core member of the PDGF/VEGF superfamily, PDGF-BB specifically engages PDGFR-β to activate Ras-MAPK and PI3K-Akt signaling pathways, driving directed migration, proliferation, and differentiation of mesenchymal stem cells, pericytes, and vascular smooth muscle cells while enhancing extracellular matrix adhesion through integrin αvβ3 upregulation. In cell therapy applications, this protein serves as a critical component in 3D bioscaffold culture systems, where controlled release kinetics enhance ex vivo expansion and paracrine activation of mesenchymal stem cells (MSCs), synergize with VEGF to engineer functional vascular networks, and promote neural progenitor differentiation into oligodendrocyte precursor cells (OPCs), thereby creating vascularized microenvironments for tissue-engineered grafts. The native disulfide-bonded dimeric configuration preserves full bioactivity, while the His-tag design enables precise purification without Fc-mediated off-target activation, making it particularly suitable for regenerative medicine applications requiring spatiotemporal control of growth factor concentrations.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve in sterile Water for Injection, 0.9% NaCl, or PBS (pH 7.4) maintaining final concentration ≥100 μg/mL to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Bassetti B, Carbucicchio C, Catto V, Gambini E, Rurali E, Bestetti A, Gaipa G, Belotti D, Celeste F, Parma M, Righetti S, Biava L, Arosio M, Bonomi A, Agostoni P, Scacciatella P, Achilli F, Pompilio G. Linking cell function with perfusion: insights from the transcatheter delivery of bone marrow-derived CD133+ cells in ischemic refractory cardiomyopathy trial (RECARDIO). Stem Cell Res Ther. 2018 Sep 14;9(1):235.
2. Nguyen TT, Ding D, Wolter WR, Pérez RL, Champion MM, Mahasenan KV, Hesek D, Lee M, Schroeder VA, Jones JI, Lastochkin E, Rose MK, Peterson CE, Suckow MA, Mobashery S, Chang M. Validation of Matrix Metalloproteinase-9 (MMP-9) as a Novel Target for Treatment of Diabetic Foot Ulcers in Humans and Discovery of a Potent and Selective Small-Molecule MMP-9 Inhibitor That Accelerates Healing. J Med Chem. 2018 Oct 11;61(19):8825-8837.

Intended Us

For research and manufacturing purposes only.