


Product Data Sheet: Recombinant Human PDGF-BB, Tag Free (Lyophilized Product)

Product details	
Product Name: Recombinant Human PDGF-BB, Tag Free Product Part Number: PDGFBB-111	
Product Description	<p>Recombinant human platelet-derived growth factor-BB (PDGF-BB) is a homodimeric protein composed of two identical PDGF-B chains linked by disulfide bonds. Structurally, each monomer consists of a conserved cysteine knot motif that is essential for its stability and biological activity. PDGF-BB functions primarily as a potent mitogen, promoting cell proliferation, migration, and survival, particularly in cells of mesenchymal origin, such as fibroblasts, smooth muscle cells, and glial cells. Its dimeric structure facilitates receptor dimerization and activation, triggering downstream signaling cascades crucial for cellular responses.</p> <p>In research, PDGF-BB is widely used to study tissue repair, angiogenesis, and fibrosis due to its pivotal role in wound healing and regeneration. Its applications extend to developing therapies for chronic wounds, such as diabetic ulcers, and investigating tumor microenvironments due to its involvement in cancer-related stromal activation. Moreover, PDGF-BB is utilized in bioengineering to enhance the integration and healing of biomaterials in regenerative medicine. Its dual capacity as a monomer for structural study and as a dimer for functional activation makes it a critical molecule for advancing therapeutic and bioengineering innovations.</p>
Synonyms	Platelet-derived growth factor-BB, PDGF-2, Proto-oncogene c-SIS, Becaplermin
Sequence	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: flex; align-items: center; justify-content: center;"> PDGFbb (Ser1 - Thr109) * </div> <p>*There is a short 15 amino acid overhang post-cleavage at the C-terminus of the protein. Sequence: Full sequence available upon request. Total Amino Acids: 124 aa. Calculated MW: 13.6 kDa as monomer</p>
Formulation	Lyophilised protein in 50 mM Sodium Acetate, 100 mM NaCl, pH 5.
Purity & Identity	≥95% pure, verified by SDS PAGE. Identity has been verified by Western Blot using polyclonal anti-PDGFbb antibody. Confirmed by mass spec. Data is available upon request.
Safety	Endotoxin: <1 EU/μg. Mycoplasma: Negative



Protein Content	Concentration verified by total protein assay.
Biological Activity	Determined by SPR and Cell activity. Human PDGF R beta, Fc Tag captured by Anti-Fc immobilized on a carboxymethyl dextranchip can bind Human PDGF-BB, Tag Free with a consistent affinity constant relative to an external reference standard control. Cell activity was tested using the NIH3T3 cell line.
Application	Research Use Only. Not for diagnostic or therapeutic applications.

Storage & Handling

Products are lyophilized and shipped at ambient temperature. Please follow the storage and handling instructions below after receiving the product.

Storage	Upon arrival, store the lyophilized protein at -20°C.
Stability	Stable as supplied for 3 months from retest date specified in the Certificate of Analysis (CoA). For continued use beyond the retest date, contact the manufacturer.
Reconstitution	Gently tap the vial to collect all lyophilized material at the bottom. Reconstitute the product with 10mM Acetic acid solution to the volume specified in the Certificate of Analysis (CoA). Gently pipette the solution along the inner sides of the vial, avoiding vigorous shaking to prevent foaming and protein denaturation. Keep the vial on ice. Aliquot the solution and store at temperatures below -70°C for up to 3 months. Avoid repeated freeze-thaw cycles.
Recommendation	As an additional precaution, after adding reconstituted products to media, filter-sterilize before use in cell culture.

Frequently Asked Questions

- Why can't I see a pellet in the vial?**
 Lyophilized powder may not be visible for many reasons including, but not limited to, dislodged powder being stuck on the cap or lack of carrier proteins that make the product difficult to see. Please tap or centrifuge the vial to bring all the material down to the bottom and reconstitute the product as outlined above.

- **Are there any stability concerns with freeze thawing?**
Repeated freeze thawing is not recommended, as this may damage the protein products resulting in reduced functionality. After reconstitution, please aliquot into suitable sizes for one time use and freeze.
- **Is this protein bioactive?**
Yes, its bioactivity has been confirmed through binding affinity with the PDGFbb receptor using SPR, as well as functional assays with the NIH3T3 cell line.

References

1. Wang, Y., et al. "Platelet-derived growth factor BB stimulates vasculogenesis of mouse embryonic stem cells." *Cardiovascular Research*, vol. 81, no. 1, 2009, pp. 159-168. DOI: 10.1093/cvr/cvn264
2. Smyth, N., et al. "PDGF-BB signaling via PDGFR- β regulates the maturation of blood vessels generated upon vasculogenic differentiation of human induced pluripotent stem cells." *Frontiers in Cell and Developmental Biology*, 2022. DOI: 10.3389/fcell.2022.977725
3. Ghofrani, H. A., et al. "PDGF-BB regulates the pulmonary vascular tone: impact of PDGFR- β signaling on vascular contraction and relaxation." *Respiratory Research*, vol. 19, 2018, p. 120. DOI: 10.1186/s12931-018-0829-5
4. Forsberg, K., et al. "Platelet-Derived Growth Factor-BB Controls Epithelial Tumor Cell Growth In Vivo and In Vitro by Striking Paracrine Effects on Stromal Cells and Endothelial Cells." *Proceedings of the National Academy of Sciences*, vol. 97, no. 3, 2000, pp. 1220-1225. DOI: 10.1073/pnas.97.3.1220

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End of Product Data sheet