

## CTGrade GMP rh PDGF-BB

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Catalog #	Product	Size
500-25	CTGrade GMP rh PDGF-BB	50µg, 100µg, 1mg lyophilized

### Intended Use

This product is for research or further manufacturing use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

### Product Description

This product is produced from *E. coli* and is manufactured in a facility that does not use or process beta-lactam containing materials. No animal- or human-derived materials were used during manufacturing or as ingredients. As such, the risk for BSE/TSE contamination can be considered negligible. This product is manufactured, tested, and released in an ISO 9001:2015 certified facility and follows cGMP practices. USP chapter <1043> for ancillary materials has been considered in the manufacture of this product.

Synonyms: GDGF, ODGF

NIH Accession Number: P01127

Background: PDGF comprises a family of homo or heterodimeric growth factors including PDGF-AA, PDGF-AB, PDGF-BB, PDGF-CC, and PDGF-DD. PDGFs are produced by platelets, macrophages, vascular endothelium, fibroblasts, and keratinocytes (1, 2, 3). These ligands bind to two different transmembrane tyrosine kinase receptors (PDGFR-alpha and PDGFR-beta) (4). PDGF plays a role in each stage of wound healing. Upon injury, PDGF is released from degranulating platelets and is present in wound fluid (5, 6). This stimulates mitogenicity and chemotaxis of neutrophils, macrophages, fibroblasts, and smooth muscle cells to the wound site (7). PDGF has also been shown to enhance the proliferation of fibroblasts and thus the production of ECM (8).

## Specifications

Formulation:	CTGrade GMP rh PDGF-BB is lyophilized from a 0.2 µm filtered solution containing 10 mM Sodium Phosphate, pH 7.5
Protein Purity:	≥98% determined by reducing and non-reducing SDS-PAGE analysis.
Endotoxin:	<0.01 EU/µg using USP <85>/ EP 2.6.14
Bioactivity:	ED50 is determined by the dose-dependent Proliferation of NR6R-3T3 cells. The ED50 is typically less than 5 ng/mL. The international units of CTGrade GMP rh PDGF-BB is approximately 1.6 x10 <sup>3</sup> IU/µg, which is calibrated against recombinant Human Platelet-Derived Growth Factor BB WHO International Standard (NIBSC code 94/728).
Quality:	Carrier-free and no animal- or human-derived materials were used during manufacturing.

## Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis, which is available at [www.irvinesci.com](http://www.irvinesci.com) or upon request.

## Shipping

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

## Storage Instructions and Stability

Upon receipt, store the lyophilized protein at -20°C in a manual defrost freezer. Unopened vials are stable for 36 months from the date of manufacture. Reconstituted material should be apportioned in working volumes and stored at or below -20°C in manual defrost freezer.

For short term storage reconstituted material is stable for 4-6 weeks when stored at 2-8°C. Stability can be increased by adding at least 0.1% carrier protein.

## Precautions

For *ex vivo* use only. Not for injection or diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical uses has not been established. Please refer to the Safety Data Sheet for information regarding hazards and safe handling practices.

## Directions for Use

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### 1. Reconstitution

Allow the vial and sterile water (e.g. FUJIFILM Irvine Scientific, Inc. P/N 9309 Water for Injection) to equilibrate to room temperature. Draw up desired volume of reconstitution buffer. Aseptically puncturing through rubber stopper with sterile needle, inject the buffer to achieve the desired concentration (0.1-0.5 mg/mL). Swirl the vial gently, **do not vortex**. Allow protein to rehydrate for 10-15 minutes at room temperature with occasional gentle mixing.

### 2. Optimum Concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

## Related Products

Catalog #	Product	Size
9024	DME High Glucose w/o L-Glutamine	500mL, 1L
9031	DME High Glucose-Liquid	500mL, 1L
9309	Water for Injection	1L

## References

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3. Uutela M, Wirzenius M, Paavonen K, Rajantie I, He Y, Karpanen T, Lohela M, Wiig H, Salven P, Pajusola K, Eriksson U, Alitalo K. PDGF-D induces macrophage recruitment, increased interstitial pressure, and blood vessel maturation during angiogenesis. *Blood*2004; 104: 3198–204
4. Lederle W, Stark HJ, Skobe M, Fusenig NE, Mueller MM. Platelet-derived growth factor-BB controls epithelial tumor phenotype by differential growth factor regulation in stromal cells. *Am J Pathol*2006; 169: 1767–83.
5. Trengove NJ, Bielefeldt-Ohmann H, Stacey MC. Mitogenic activity and cytokine levels in non-healing and healing chronic leg ulcers. *Wound Repair Regen*2000; 8: 13–25.
6. Vogt PM, Lehnhardt M, Wagner D, Jansen V, Krieg M, Steinau HU. Determination of endogenous growth factors in human wound fluid: temporal presence and profiles of secretion. *Plast Reconstr Surg*1998; 102: 117–23.
7. Heldin CH, Westermark B. Mechanism of action and in vivo role of platelet-derived growth factor. *Physiol Rev*1999; 79: 1283–316
8. Lin H, Chen B, Sun W, Zhao W, Zhao Y, Dai J. The effect of collagen-targeting platelet-derived growth factor on cellularization and vascularization of collagen scaffolds. *Bio-materials*2006; 27: 5708–14.

## Technical Support

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### CONTACT US

For more information or assistance contact Customer Service at:

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- Direct line: +1 800 577 6097

### WEBSITE RESOURCES

Visit the website at [www.irvinesci.com](http://www.irvinesci.com) for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature

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## REVISION HISTORY

### Version 01 Effective on 13-Jun-2023

Initial

### Version 02 Effective on 16-Aug-2023

Updated Related products, added approximate IU/ug in activity section

### Version 03 Effective on 01-Apr-2024

Added GMP in name, add BSE/TSE statement

## DOCUMENT ELECTRONIC SIGNATURES

### DOCUMENT APPROVAL WORKFLOW

#### Author Approval

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#### Required Workflow Steps for this Category

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