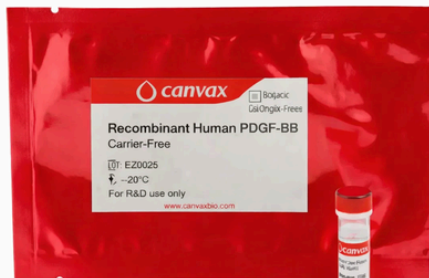




RECOMBINANT HUMAN PDGF-BB

Recombinant Growth Factor for Defined Media and Cell Therapy Manufacturing



- GMP manufacturing
- Animal-origin-free recombinant production
- Carrier-free and tag-free formulation
- Strict endotoxin control (<0.05 EU/μg)
- Functionally validated bioactivity
- Consistent batch-to-batch performance



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Product Overview

Recombinant human Platelet-Derived Growth Factor-BB (PDGF-BB) is a signaling protein that regulates proliferation, migration and survival in mesenchymal and connective tissue cell populations through activation of platelet-derived growth factor receptors (PDGFRs). This pathway plays an important role in stromal cell biology, angiogenesis and tissue regeneration and is widely used in advanced cell culture systems.

Canvax recombinant human PDGF-BB corresponds to the biologically active disulfide-linked homodimeric growth factor (~25 kDa) and is produced using a recombinant expression system under animal-origin-free conditions. The protein is supplied carrier-free and tag-free to ensure high purity and minimal interference with downstream cellular signaling pathways.

The protein is designed as a controlled raw material for defined cell culture systems, including stem cell culture, stromal cell expansion and advanced media formulations. Strict endotoxin control, analytical characterization and functional validation ensure reliable biological activity and consistent batch-to-batch performance.

The protein is delivered as a stable lyophilized preparation to facilitate long-term storage, convenient handling and high recovery following reconstitution.

Product Specification

Protein	Human PDGF-BB
Bioactivity	EC ₅₀ = 12.7 ng/mL (0.52 nM) Batch representative
Expression system	<i>E. coli</i>
Purity	>98%
Endotoxin	<0.05 EU/μg
Formulation	Lyophilized
Animal origin status	Animal origin-free (AOF)
Carrier	None



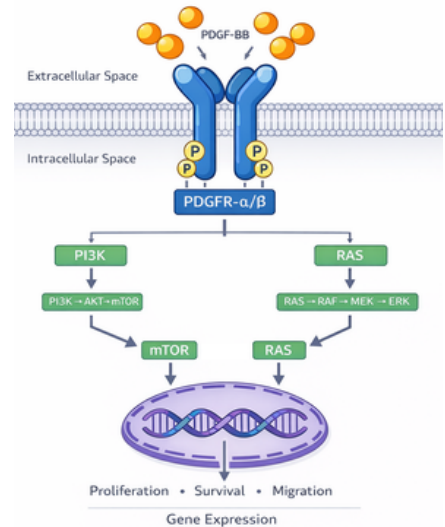
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Biological Function

Platelet-Derived Growth Factor-BB (PDGF-BB) is a disulfide-linked homodimeric growth factor belonging to the PDGF family that regulates proliferation, migration and survival in mesenchymal cell populations.

PDGF-BB signals through PDGFR- α and PDGFR- β , inducing receptor dimerization and autophosphorylation. This activates intracellular pathways including PI3K-AKT-mTOR and MAPK (RAS-RAF-MEK-ERK), which regulate gene expression programs controlling cell proliferation, survival and migration.

In advanced cell culture systems, recombinant PDGF-BB is widely used to support stromal and mesenchymal cell expansion and to reproduce signaling environments relevant to tissue regeneration, vascular biology and stem cell research.



Simplified representation of PDGF-BB signaling. Ligand binding induces PDGFR- α/β dimerization and receptor autophosphorylation, activating downstream pathways including PI3K-AKT-mTOR and RAS-RAF-MEK-ERK. These signaling cascades regulate gene expression programs involved in mesenchymal cell proliferation, survival and migration.



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Applications in Advanced Cell Culture

Canvax recombinant growth factors are developed as critical raw materials for advanced cell culture systems:

- Designed for defined and serum-free media formulations
- Consistent biological performance across batches
- Scalable supply from research to GMP manufacturing environments

Recombinant human PDGF-BB is widely used as a critical growth factor in defined cell culture systems requiring controlled activation of PDGF receptor signaling. Its ability to promote proliferation and migration in mesenchymal cell populations makes it an important component of advanced culture media formulations.

Mesenchymal and stromal cell expansion

PDGF-BB is commonly incorporated into culture media used for expansion of fibroblasts, pericytes and mesenchymal stromal cells. Activation of PDGFR signaling promotes proliferation and supports maintenance of stromal cell populations in vitro.

Stem cell differentiation models

PDGF signaling contributes to expansion of progenitor populations in various differentiation systems. Recombinant PDGF-BB is frequently used in protocols involving vascular and mesenchymal lineages derived from pluripotent stem cells.

Regenerative biology and disease modeling

PDGF-BB signaling plays an important role in tissue regeneration, angiogenesis and stromal cell biology. Recombinant PDGF-BB is therefore widely used in regenerative biology studies and experimental models of tissue remodeling.

Functional Bioactivity

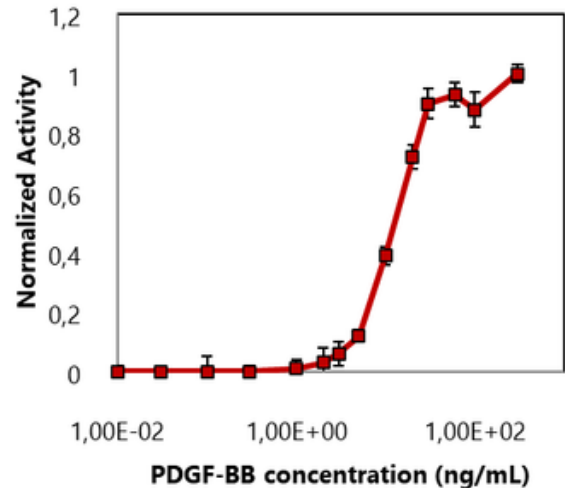
The biological activity of recombinant human PDGF-BB was evaluated using a quantitative NFAT-responsive luciferase reporter assay in HEK293 cells expressing platelet-derived growth factor receptors.

Cells were stimulated with serial dilutions of recombinant PDGF-BB and receptor activation resulted in dose-dependent induction of luciferase expression. Reporter activity was quantified to generate a dose-response curve and determine biological potency.

The recombinant PDGF-BB demonstrated robust biological activity consistent with the expected potency of biologically active PDGF-BB.

EC₅₀ = 12.7 ng/mL (0.52 nM)

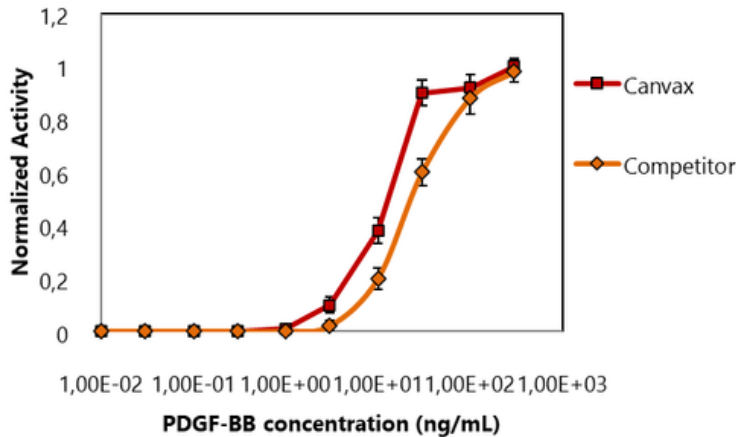
PDGF-BB Bioactivity



Dose-response bioactivity of recombinant human PDGF-BB measured using an NFAT-luciferase reporter assay in HEK293 cells expressing PDGFR. Dose-dependent activation confirms robust biological activity of the recombinant protein.

Functional Bioactivity Benchmark

PDGF-BB Functional Potency Benchmark



Functional bioactivity benchmark of recombinant PDGF-BB compared with a commercially available reference protein. Overlapping dose-response curves demonstrate comparable activation of PDGFR-dependent signaling pathways.

To further evaluate functional performance, recombinant PDGF-BB was assessed in parallel with a commercially available reference protein using the same luciferase reporter assay system.

Dose-response analysis showed strong activation of PDGFR-dependent signaling across the tested concentration range. The recombinant PDGF-BB demonstrated an EC₅₀ of 12.5 ng/mL (0.5 nM), while the commercially available reference protein exhibited an EC₅₀ of 25.85 ng/mL (1.03 nM).

These results demonstrate strong functional potency and confirm that the recombinant protein reliably activates PDGF receptor signaling pathways suitable for demanding cell culture workflows.



Quality and Analytical Characterization

To ensure reliable performance in demanding cell culture systems, recombinant human PDGF-BB from Canvax is subjected to multiple analytical and functional quality control assays.

These tests verify the purity, molecular identity and biological activity of the protein and ensure reproducible batch-to-batch performance

Designed as a controlled raw material for defined media and advanced cell culture systems.

Need more info? [Request Quality Documents](#)

Parameter	Typical specification
Identity	Correct molecular mass
Protein integrity	Dimeric PDGF-BB protein
Purity	>98%
Endotoxin	<0.05 EU/ μ g protein
Bioactivity	Representative EC ₅₀ within expected range
Sterility	No microbial growth detected
Mycoplasma	Negative
Recovery	>95%

GMP-grade material includes an expanded analytical characterization panel covering host cell impurities, protein identity, functional potency testing and others.

Available Formats and Ordering Information

Product	Reference	Format	Ordering
Recombinant Human PDGF-BB	CR013	50 µg (Lyophilized)	Order Online

Research-grade material is intended for evaluation and process development activities. **Additional RUO formats are available upon request.** [Contact us.](#)

Product	Reference	Supply format	Ordering
Recombinant Human PDGF-BB GMP	CR013-GMP	Bulk supply	Contact us info@canvaxbiotech.com

GMP manufacturing is available upon request for customers requiring controlled production environments and full quality documentation.



GMP Manufacturing and Quality Capabilities

Canvax operates GMP-certified facilities designed to support biopharmaceutical development programs requiring a controlled transition between early-stage activities and GMP manufacturing environments.

GMP Manufacturing Facilities



GMP-certified facilities designed for the manufacture of biopharmaceutical products, operating under ISO 9001 and ISO 13485 quality systems.

Bulk Supply and Scalability



Manufacturing capacity to support bulk supply requirements, from development-scale batches to larger volumes aligned with program needs.

Fill & Finish and Packaging



Fill and finish capabilities for client-specific formats, supporting controlled dispensing, packaging and labeling under qualified conditions.

Analytical Characterization



Extended analytical capabilities for protein characterization, including identity, purity and bioactivity assessment, supporting robust quality control strategies.

Supply Chain Reliability



Integrated manufacturing and quality systems designed to support consistent supply, change control and long-term program continuity.

Additional information related to manufacturing capabilities, supply formats and GMP programs is available upon request at info@canvaxbiotech.com