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PDGF BB Human

Platelet-Derived Growth Factor BB Human Recombinant
GRF0308

Product Overview

Name	PDGF BB Human
Description	
Platelet-Derived Growth Factor BB Human Recombinant	
Accession (Primary)	P01127
Synonyms	
Glioma-derived growth factor, GDGF, Osteosarcoma-derived Growth Factor, ODGF, SIS, SSV, PDGF2, c-sis, FLJ12858, PDGF-BB, PDGF B-chain, Platelet-derived growth factor beta polypeptide.	
Introduction	
PDGF-BB is a member of the platelet-derived growth factor family. The four members of this family are mitogenic factors for cells of mesenchymal origin and are characterized by a motif of eight cysteines. This gene product can exist either as a homodimer (PDGF-BB) or as a heterodimer with the platelet-derived growth factor alpha polypeptide (PDGF-AB), where the dimers are connected by disulfide bonds. Mutations in this gene are associated with meningioma. Reciprocal translocations between chromosomes 22 and 7, at sites where this gene and that for COL1A1 are located, are associated with a particular type of skin tumor called dermatofibrosarcoma protuberans resulting from unregulated expression of growth factor. Two splice variants have been identified for this gene.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
Lyophilized from a 0.2 μm filtered concentrated solution in PBS, pH7.4.	
Stability	
Lyophilized Platelet-derived Growth Factor BB although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution PDGF BB should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.	
Amino acid sequence	

SLGSLTIAEP AMIAECKTRT EVFEISRRLI DRTNANFLVW PPCVEVQRCS GCCNNRNVQC RPTQVQLRPV QVRKIEIVRK KPIFKKATVT LEDHLACKCE TVAAARPVT.

Biological Activity

Determined by the dose-dependent stimulation of the proliferation of Balb/c 3T3 cells. The expected ED 50 for this effect is 1.0-3.0 ng/ml.

Solubility

It is recommended to reconstitute the lyophilized Platelet-derived Growth Factor-BB in sterile 18MΩ-cm H 2 O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Background

PDGF BB HUMAN: Overview of Its Production, Properties, and Clinical Significance PDGF BB HUMAN, standing for Platelet-Derived Growth Factor BB, is a powerful protein in the field of medical research, particularly in cell growth and healing. This growth factor plays a crucial role in the development and repair of tissues by stimulating cells primarily of mesenchymal origin. Characteristics and Production PDGF is produced as a recombinant protein in E. coli. It presents as a homodimer consisting of two identical polypeptide chains, each containing 109 amino acids, culminating in a total molecular mass of 24.3 kDa. The production process ensures a high-purity product, which is essential for reliable scientific results. Physical Properties and Formulation This growth factor appears as a white, sterile, lyophilized powder. It is formulated in a buffered solution (PBS, pH 7.4) and then filtered to ensure sterility and purity, essential for laboratory use. The formulation process is designed to maintain the stability and activity of the protein under various research conditions. Solubility and Storage Instructions PDGF BB is recommended to be reconstituted in sterile water to achieve a concentration of no less than 100 µg/ml. This solution can then be diluted further to meet experimental needs. Once reconstituted, the protein should be stored at 4°C for short-term use (2-7 days) and below -18°C for long-term storage. Avoiding freeze-thaw cycles is crucial to preserve its biological activities. Stability and Purity The lyophilized form of PDGF BB remains stable at room temperature for up to three weeks but requires desiccation for longer storage. Moreover, the purity of this growth factor exceeds 95%, as confirmed by rigorous testing, including RP-HPLC and SDS-PAGE, ensuring that researchers receive a highly effective product. Research Applications PDGF BB HUMAN is widely used in laboratory research to explore various biological processes, including wound healing, angiogenesis, and the development of certain types of cancers. It is also instrumental in studying the cellular mechanisms underlying tissue repair and regeneration. Biological Activity The effectiveness of PDGF BB is measured by its ability to stimulate the proliferation of Balb/c 3T3 cells, with an effective dose (ED50) ranging from 1.0 to 3.0 ng/ml. This high level of activity underscores its utility in promoting cell growth, making it an invaluable tool in tissue engineering and regenerative medicine. Usage Guidelines It is important to note that PDGF BB HUMAN is intended solely for laboratory research and is not suitable for drug, food, or cosmetic applications. Researchers must handle this growth factor under controlled conditions to ensure safety and efficacy. Essentially, PDGF BB is a pivotal component in the toolkit of biomedical researchers, offering profound insights into cellular processes and potential therapeutic approaches. Also, its well-defined properties and controlled production make it a staple in studies focused on cell growth and tissue repair.

References

1. Title :Platelet-derived growth factor mediates survival of leukemic large granular lymphocytes via an autocrine regulatory pathway. Publication :Published online before print October 30, 2009, doi: 10.1182/blood-2009-06-223719 Blood January 7, 2010 vol. 115 no. 1 51-60 . Link : PDGF BB prospec publication 2. Title : attenuates skeletal muscle dystrophy in mdx mice. Publication :Published online before print March 16, 2009, doi: 10.1096/fj.09-129833 August 2009 The FASEB Journal vol. 23 no. 8 2539-2548. Link : Platelet-Derived Growth Factor BB prospec publication 3. Title : Human Cord Blood-Derived Endothelial Progenitor Cells and Their Conditioned Media Exhibit Therapeutic Equivalence for Diabetic Wound Healing. Publication : Cell Transplantation, Vol. 19, pp. 1635–1644, 2010 0963-6897/10 $90.00 + .00 Printed in the USA. All rights reserved. DOI: 10.3727/096368910X516637 Copyright ? 2010 Cognizant Comm. Corp. Link : http://docserver.ingentaconnect.com/deliver/connect/cog/09636897/v19n12/s11.pdf?expires=1370351771&id=74450861&titleid=5476&accname=Guest+User&checksum= 14BACCDE2ACF33

Precautions

PDGF BB Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P01127)

Background

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References for protein:

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