9051 Mira Mesa Blvd, #910094
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BMP 7 Human, HEK

Bone Morphogenetic protein-7 Human Recombinant, HEK
CYK0085

Product Overview

Name	BMP 7 Human, HEK
Description	
Bone Morphogenetic protein-7 Human Recombinant, HEK	
Accession (Primary)	P18075
Synonyms	
Osteogenic Protein 1, BMP-7.	
Introduction	
The bone morphogenetic proteins (BMPs) are a family of secreted signaling molecules that can induce ectopic bone growth. Many BMPs are part of the transforming growth factor-beta (TGFB) superfamily. BMPs were originally identified by an ability of demineralized bone extract to induce endochondral osteogenesis in vivo in an extraskeletal site. Based on its expression early in embryogenesis, the BMP encoded by this gene has a proposed role in early development. In addition, the fact that this BMP is closely related to BMP5 and BMP7 has lead to speculation of possible bone inductive activity.	
Source	
HEK.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
The BMP7 was lyophilized from 1mg/ml in 1xPBS.	
Stability	
Lyophilized BMP7 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BMP-7 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.	
Purity	
Greater than 95% as obsereved by SDS-PAGE.	
Amino acid sequence	
DFSLDNEVHSSFIHRRLRSQERREMQREILSILGLPHRPRPHLQGKHNSAPMFMLDLYNAM	
AVEEGGGPGGQGFSYPYKAVFSTQGPPLASLQDSHFLTDADMVMSFVNLVEHDKEFFHPR	

YHHREFRFDLSKIPEGEAVTAAEFRIYKDYIRERFDNETFRISVYQVLQEHLGRESDLFLDSRTLWASE EGWLVFDITATSNHWVVNPRHNLGLQLSVETLDGQSINPKLAGLIGRHGPQNKQPFMVAFFKAT.

Biological Activity

The specific activity was determined by the dose dependent induction of alkaline phosphatase production in the ATDC-5 cell line (Mouse chondrogenic cell line) and is typically 50-250ng/ml.

Solubility

It is recommended to reconstitute the lyophilized BMP-7 in sterile water not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Background

BMP-7 Bone Morphogenetic Protein-7 Human Recombinant: A Key Regulator of Osteogenesis and Beyond Abstract: BMP-7 (Bone Morphogenetic Protein-7), also known as Osteogenic Protein 1 or BMP-7, is a potent growth factor that plays a crucial role in various biological processes, particularly in osteogenesis and tissue regeneration. This research paper aims to comprehensively explore the molecular characteristics, signaling pathways, and diverse physiological functions of BMP-7. Additionally, it investigates the therapeutic implications of BMP-7 in different disorders. Synonyms such as Osteogenic Protein 1 and BMP-7 associated with the protein are discussed throughout the paper to highlight their relevance in scientific literature. Introduction: BMP-7, also known as Osteogenic Protein 1 or BMP-7, is a growth factor with multifaceted roles in osteogenesis, tissue regeneration, and disease. This section introduces BMP-7 and its synonyms, highlighting their significance and relevance in scientific research. Molecular Characteristics of BMP-7: This section explores the molecular characteristics of BMP-7, including its primary amino acid sequence, protein structure, post-translational modifications, and binding partners. The importance of these factors in determining BMP-7's biological activity and receptor specificity is discussed. Signaling Pathways Activated by BMP-7 : BMP-7 activates specific signaling pathways upon binding to its receptors, leading to diverse cellular responses. This section focuses on the canonical BMP signaling pathway, highlighting the activation of Smad-dependent and Smad-independent pathways. The downstream effectors and transcriptional regulators involved in mediating BMP-7's cellular responses are also discussed. Physiological Functions of BMP-7 : BMP-7 plays critical roles in various physiological processes, particularly in osteogenesis and tissue regeneration. This section provides an in-depth analysis of BMP-7's contributions to these processes, emphasizing its role in promoting bone formation, cartilage development, renal function, and wound healing. Therapeutic Implications of BMP-7 : The unique properties of BMP-7 make it a promising therapeutic candidate for various disorders. This section discusses the potential applications of BMP-7 in bone regeneration, cartilage repair, kidney disease, and tissue engineering. The challenges and future directions in utilizing BMP-7 as a therapeutic agent are also explored. BMP-7 in Disease Progression: BMP-7 is implicated in the progression of certain diseases, including fibrosis, cancer, and cardiovascular disorders. This section examines the role of BMP-7 in tissue fibrosis, tumor progression, angiogenesis, and cardiac remodeling. The therapeutic implications and targeting of BMP-7 in disease management are also discussed. Conclusion: BMP-7, also known as Osteogenic Protein 1 or BMP-7, is a critical growth factor involved in osteogenesis, tissue regeneration, and disease progression. Understanding the molecular characteristics, signaling pathways, and physiological functions of

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BMP-7 contributes to the exploration of its therapeutic potential in various disorders.

Precautions

BMP 7 Human, HEK is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P18075)

Background

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therapeutic implications and targeting of BMP-7 in disease management are also discussed. Conclusion: BMP-7, also known as Osteogenic Protein 1 or BMP-7, is a critical growth factor involved in osteogenesis, tissue regeneration, and disease progression. Understanding the molecular characteristics, signaling pathways, and physiological functions of BMP-7 contributes to the exploration of its therapeutic potential in various disorders.