9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

BMP 7 Human, Plant

Bone Morphogenetic Protein-7 Human Recombinant, Plant
CYK0087

Product Overview

Name	BMP 7 Human, Plant
Description	
Bone Morphogenetic Protein-7 Human Recombinant, Plant	
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	
Nicotiana benthamiana.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
BMP-7 was lyophilized from a solution containing Tris-HCl 0.05M buffer at pH 7.4.	
Stability	
Lyophilized BMP-7 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BMP 7 Human 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 97.0% as determined by SDS-PAGE.	
Amino acid sequence	
HHHHHHSTGSKQRSQNRSKTPKNQEALRMANVAEN SSSDQRQACKKHELYVSFRDLGWQDWIIAPEGYAAY YCEGECAFPLNSYMNATNHAIVQTLVHFINPETVPKP CCAPTQLNAISVLYFDDSSVILKKYRNMVVRACGCH.	

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Biological Activity

The biological activity of BMP-7 was measured by its ability to induce alkaline phosphatase production by ATDC5 cells, ED 50 is less than 40ng/ml, corresponding to a specific activity of 25,000 units/mg.

Solubility

Lyophilized BMP-7 protein should be reconstituted in distilled water to a concentration of 50 ng/ µl.

Background

Research Paper on Bone Morphogenetic Protein-7 Human Recombinant, Plant, Monomer, HEK Abstract: Welcome to our research paper exploring the incredible world of Bone Morphogenetic Protein-7 Human Recombinant, Plant, Monomer (BMP-7 HR) in Human Embryonic Kidney Cells (HEK). In this study, we embark on a captivating journey to unravel the wonders of BMP-7 HR and its significance in cellular differentiation. As a key member of the transforming growth factor-beta (TGF-β) superfamily, BMP-7 HR plays a pivotal role in tissue regeneration and development. Join us as we delve into the intricate molecular mechanisms of BMP-7 HR signaling in HEK cells, while also exploring its friendly interactions with key cytokines, including Tumor Necrosis Factor-alpha (TNF-α) and Tumor Necrosis Factor-alpha Superfamily Member 2 (TNFα SF2 or TNFSF2). Introduction: Step into the fascinating world of BMP-7 HR! In this section, we introduce the remarkable BMP-7 HR and its crucial role in guiding cellular differentiation. Meet our trusted companion, Human Embryonic Kidney Cells (HEK), as they help us unveil the secrets of BMP-7 HR signaling. BMP-7 HR Signaling in HEK Cells: Be amazed by the graceful dance of BMP-7 HR signaling within HEK cells! Uncover the captivating process of ligands binding to specific receptors, paving the way for both the canonical SMAD-dependent and non-canonical SMAD-independent pathways. This harmonious interplay orchestrates various cellular processes, including gene transcription, cell proliferation, and differentiation. Influential Role in Cellular Differentiation: BMP-7 HR takes center stage as a master conductor of cellular differentiation within HEK cells. Marvel at its ability to promote osteogenic differentiation, leading to the expression of vital osteogenic markers like RUNX2 and Osteocalcin. But that's not all! Join us in exploring BMP-7 HR's versatility, influencing other forms of differentiation, such as chondrogenic and adipogenic pathways. Interplay with Key Cytokines: Uncover the intriguing interactions between BMP-7 HR and key cytokines like TNF-α and TNFSF2. Witness how BMP-7 HR modulates the expression and activity of these cytokines, hinting at potential cross-talk between BMP-7 HR and inflammatory pathways, fostering a harmonious cellular environment. Therapeutic Implications and Tissue Regeneration: The therapeutic potential of BMP-7 HR in tissue regeneration comes to the forefront. Together, we explore the exciting possibilities of utilizing BMP-7 HR in regenerative medicine, offering hope for healing and tissue repair. As we navigate this path, we also address challenges, such as optimal dosage, innovative delivery methods, and safety considerations, ensuring the best outcomes. Conclusion: As we conclude our exploration of BMP-7 HR in HEK cells, we stand in awe of its role in guiding cellular differentiation and tissue regeneration. Equipped with this knowledge, we look forward to a future where BMP-7 HR from plant sources opens doors to innovative applications in regenerative medicine, making a positive impact on human health and well-being.

References

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Precautions

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

Target Information: (P18075)

Background

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