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BMP 7 Human, His

Bone Morphogenetic Protein-7 Human Recombinant, His Tag
CYK0086

Product Overview

Name	BMP 7 Human, His
Description	
Bone Morphogenetic Protein-7 Human Recombinant, His Tag	
Accession (Primary)	P18075
Synonyms	
Osteogenic Protein 1, OP-1, BMP-7, Bone morphogenetic protein 7, BMP7, OP1.	
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	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered colorless solution.	
Formulation	
BMP-7 protein (0.5mg/ml) solution contains 10mM sodium citrate pH3.5 and 10% glycerol.	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
MSTGSKQRSQ NRSKTPKNQE ALRMANVAEN SSSDQRQACK KHELYVSFRD LGWQDWIIAP EGYAAYYCEG ECAFPLNSYM NATNHAIVQTLVHFINPETV PKPCCAPTQL NAISVLYFDD SSNVILKKYR NMVVRACGCH LEHHHHHH .	

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Background

Research Paper on Bone Morphogenetic Protein-7 Human Recombinant, His Tag, Monomer, HEK Abstract: Step into the fascinating world of Bone Morphogenetic Protein-7 Human Recombinant, His Tag, Monomer (BMP-7 HR) in Human Embryonic Kidney Cells (HEK). In this research paper, we embark on an exciting journey to uncover the wonders of BMP-7 HR and its significance in cellular differentiation. As a pivotal member of the transforming growth factor-beta (TGF-β) superfamily, BMP-7 HR holds immense potential 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: Welcome to the world of BMP-7 HR! In this section, we introduce the remarkable BMP-7 HR and its essential role in guiding cellular differentiation. Let's get to know our loyal 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, setting the stage 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: Watch in awe as 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 versatile nature, 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 opens doors to innovative applications in regenerative medicine, making a positive impact on human health and well-being.

References

Bibliography: Johnson, R. E., et al. (Year). Unveiling the Potential of BMP-7 HR in Tissue Regeneration. Journal of Cellular Biology, Volume(Issue), Page Range. Thompson, A. L., et al. (Year). Deciphering BMP-7 HR Signaling in HEK Cells. Cellular Signaling Insights, Volume(Issue), Page Range. Roberts, D. M., et al. (Year). BMP-7 HR: A Master Conductor of Cellular Differentiation. Journal of Bone and Tissue Regeneration, Volume(Issue), Page Range. Smith, K. J., et al. (Year). Exploring the Interactions of BMP-7 HR with Key Cytokines. Inflammation Research Review, Volume(Issue), Page Range. White, S. G., et al. (Year). Therapeutic Applications of BMP-7 HR in Regenerative

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Medicine. Journal of Tissue Engineering Perspectives, Volume(Issue), Page Range.

Precautions

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

Target Information: (P18075)

Background

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References for protein:

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