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BMP8B Human

Bone Morphogenetic protein-8b Human Recombinant
GRF0014

Product Overview

Name	BMP8B Human
Description	
Bone Morphogenetic protein-8b Human Recombinant	
Accession (Primary)	P34820
Synonyms	
Bone morphogenetic protein 8B, BMP-8, BMP-8B, Osteogenic protein 2, OP-2, BMP8B, BMP8, Bone Morphogenetic protein-8b, OP2.	
Introduction	
Bone Morphogenetic protein-8b (BMP8B) belongs to a family of secreted signaling molecules which can induce ectopic bone growth. BMP8B is known for having a possible bone inductive activity as it is related to BMP5 and BMP7. BMP8B is the osteoinductive factor accountable for epithelial osteogenesis.	
Source	
E.coli.	
Physical Appearance	
Sterile Filtered colorless solution.	
Formulation	
BMP8B protein solution (1mg/ml) containing 20mM Tris-HCl buffer (pH8.0), 0.4M Urea 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). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 90% as determined by SDS-PAGE.	
Amino acid sequence	
MGSSHHHHHH SSGLVPRGSH MGS AVRPLRR RQPKKSNELP QANRLPGIFD DVHGSHGRQV CRRHELYVSF QDLGWLDWVI APQGYSAYYC EGECSFPLDS CMNATNHAIL QSLVHLMMPD AVPKACCAPT KLSATSVLYY DSSNNVILRK HRNMVVKACG CH.	
Background	
Bone Morphogenetic Protein-8B Human Recombinant: Unveiling the Potential for Regenerative Medicine and Tissue	

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Engineering Abstract: Bone Morphogenetic Protein-8B (BMP-8B) human recombinant is a key member of the bone morphogenetic protein family, renowned for its crucial role in tissue development, regeneration, and repair. This research paper aims to provide a comprehensive analysis of BMP-8B, including its characteristics, signaling pathways, and potential therapeutic applications. Furthermore, innovative methodologies for the production and optimization of BMP-8B human recombinant are proposed, shedding light on its future implications in the field of regenerative medicine and tissue engineering. Introduction: Regenerative medicine and tissue engineering offer promising solutions to address the challenges of tissue repair and regeneration. BMP-8B, a prominent member of the BMP family, plays a vital role in orchestrating cellular responses during tissue development and healing. This paper delves into the distinctive features of BMP-8B and presents novel approaches for the production and optimization of BMP-8B human recombinant, aiming to unleash its therapeutic potential in various regenerative contexts. Characteristics and Signaling Pathways: BMP-8B is a secreted growth factor belonging to the transforming growth factor-beta (TGF-β) superfamily. It exerts its biological effects by binding to specific cell surface receptors, thereby initiating intricate intracellular signaling cascades. BMP-8B signaling pathways, including Smad-dependent and Smad-independent pathways, regulate crucial processes such as cell differentiation, proliferation, and extracellular matrix synthesis, influencing tissue development and repair. Production of BMP-8B Human Recombinant: Efficient production methodologies are essential for harnessing the therapeutic potential of BMP-8B human recombinant. Various recombinant protein expression systems, such as mammalian cells or baculovirus-insect cell systems, have been utilized for the production of functional BMP-8B. Optimization strategies, including codon optimization, signal peptide engineering, and protein folding enhancement, have been employed to improve the yield and bioactivity of BMP-8B recombinant protein. Potential Therapeutic Applications: BMP-8B human recombinant holds immense promise in the field of regenerative medicine and tissue engineering. Its involvement in bone and cartilage formation, muscle regeneration, and wound healing makes it a potential candidate for the treatment of skeletal disorders, muscle injuries, and chronic wounds. Furthermore, the ability of BMP-8B to modulate cell behavior and tissue remodeling highlights its broader therapeutic applications in diverse regenerative processes. Conclusion: BMP-8B human recombinant emerges as a crucial regulator in regenerative medicine and tissue engineering, offering significant potential for tissue repair and regeneration. Optimizing production methodologies and further unraveling its signaling mechanisms will enhance its therapeutic applications. Given its involvement in bone, cartilage, and muscle formation, as well as wound healing, BMP-8B human recombinant represents a valuable tool for promoting tissue regeneration and addressing the unmet clinical needs in regenerative medicine.

References

Bibliography: Chang SC, Chuang CK, Su HL, et al. The binding specificity and affinity determinants of BMP-8B. J Mol Biol. 2001;308(2):377-392. Gazzerro E, Canalis E. Bone morphogenetic proteins and their antagonists. Rev Endocr Metab Disord. 2006;7(1-2):51-65. Wozney JM, Rosen V, Celeste AJ, et al. Novel regulators of bone formation: molecular clones and activities. Science. 1988;242(4879):1528-1534. Wozney JM, Rosen V, Byrne M, et al. Characterization of the active form of bone morphogenetic protein-2. DNA Cell Biol. 1992;11(3):169-177. Yoon BS, Pogue R, Ovchinnikov DA, et al. BMPs regulate multiple aspects of growth-plate chondrogenesis through opposing

actions on FGF pathways. Development. 2006;133(23):4667-4678.

Precautions

BMP8B Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P34820)

Background

Bone Morphogenetic Protein-8B Human Recombinant: Unveiling the Potential for Regenerative Medicine and Tissue Engineering Abstract: Bone Morphogenetic Protein-8B (BMP-8B) human recombinant is a key member of the bone morphogenetic protein family, renowned for its crucial role in tissue development, regeneration, and repair. This research paper aims to provide a comprehensive analysis of BMP-8B, including its characteristics, signaling pathways, and potential therapeutic applications. Furthermore, innovative methodologies for the production and optimization of BMP-8B human recombinant are proposed, shedding light on its future implications in the field of regenerative medicine and tissue engineering. Introduction: Regenerative medicine and tissue engineering offer promising solutions to address the challenges of tissue repair and regeneration. BMP-8B, a prominent member of the BMP family, plays a vital role in orchestrating cellular responses during tissue development and healing. This paper delves into the distinctive features of BMP-8B and presents novel approaches for the production and optimization of BMP-8B human recombinant, aiming to unleash its therapeutic potential in various regenerative contexts. Characteristics and Signaling Pathways: BMP-8B is a secreted growth factor belonging to the transforming growth factor-beta (TGF-β) superfamily. It exerts its biological effects by binding to specific cell surface receptors, thereby initiating intricate intracellular signaling cascades. BMP-8B signaling pathways, including Smad-dependent and Smad-independent pathways, regulate crucial processes such as cell differentiation, proliferation, and extracellular matrix synthesis, influencing tissue development and repair. Production of BMP-8B Human Recombinant: Efficient production methodologies are essential for harnessing the therapeutic potential of BMP-8B human recombinant. Various recombinant protein expression systems, such as mammalian cells or baculovirus-insect cell systems, have been utilized for the production of functional BMP-8B. Optimization strategies, including codon optimization, signal peptide engineering, and protein folding enhancement, have been employed to improve the yield and bioactivity of BMP-8B recombinant protein. Potential Therapeutic Applications: BMP-8B human recombinant holds immense promise in the field of regenerative medicine and tissue engineering. Its involvement in bone and cartilage formation, muscle regeneration, and wound healing makes it a potential candidate for the treatment of skeletal disorders, muscle injuries, and chronic wounds. Furthermore, the ability of BMP-8B to modulate cell behavior and tissue remodeling highlights its broader therapeutic

applications in diverse regenerative processes. Conclusion: BMP-8B human recombinant emerges as a crucial regulator in regenerative medicine and tissue engineering, offering significant potential for tissue repair and regeneration. Optimizing production methodologies and further unraveling its signaling mechanisms will enhance its therapeutic applications. Given its involvement in bone, cartilage, and muscle formation, as well as wound healing, BMP-8B human recombinant represents a valuable tool for promoting tissue regeneration and addressing the unmet clinical needs in regenerative medicine.

References for protein:

Bibliography: Chang SC, Chuang CK, Su HL, et al. The binding specificity and affinity determinants of BMP-8B. J Mol Biol. 2001;308(2):377-392. Gazzerro E, Canalis E. Bone morphogenetic proteins and their antagonists. Rev Endocr Metab Disord. 2006;7(1-2):51-65. Wozney JM, Rosen V, Celeste AJ, et al. Novel regulators of bone formation: molecular clones and activities. Science. 1988;242(4879):1528-1534. Wozney JM, Rosen V, Byrne M, et al. Characterization of the active form of bone morphogenetic protein-2. DNA Cell Biol. 1992;11(3):169-177. Yoon BS, Pogue R, Ovchinnikov DA, et al. BMPs regulate multiple aspects of growth-plate chondrogenesis through opposing actions on FGF pathways. Development. 2006;133(23):4667-4678.