

BMP 7 Human

Bone Morphogenetic Protein-7 Human Recombinant

CYK0084

Product Overview

Name	BMP 7 Human
Accession(Primary)	P18075
Description	Bone Morphogenetic Protein-7 Human Recombinant

Target information (P18075)

Gene Name

About Gene Symbol

Background

Bone Morphogenetic Protein-7 Human Recombinant: A Comprehensive Review Abstract: Bone Morphogenetic Protein-7 (BMP-7) is a crucial member of the transforming growth factor-beta (TGF- β) superfamily with diverse roles in development, tissue repair, and regeneration. This research paper provides a comprehensive review of BMP-7 Human Recombinant, focusing on its structure, signaling pathways, and diverse functions. Additionally, the paper explores the therapeutic potential of BMP-7 modulation. Introduction: BMP-7 is a multifunctional growth factor that plays a significant role in skeletal development and tissue homeostasis. This paper aims to provide an extensive review of BMP-7 Human Recombinant, highlighting its importance in various biological processes and its potential therapeutic applications. Structure and Function of BMP-7: BMP-7 is a disulfide-linked homodimeric protein composed of two subunits. It binds to specific cell surface receptors, activating downstream signaling pathways, including the Smad pathway and non-Smad signaling cascades. These pathways regulate cellular processes such as proliferation, differentiation, and apoptosis. Skeletal Development and Regeneration: BMP-7 is a key regulator of bone formation and remodeling. It promotes osteoblast

differentiation and bone mineralization, contributing to skeletal development and repair. BMP-7 also plays a role in cartilage formation and chondrogenesis. Tissue Repair and Regeneration: Beyond its skeletal functions, BMP-7 is involved in tissue repair and regeneration in various organs, including the kidney, liver, and heart. It promotes the regeneration of damaged tissues by stimulating cell proliferation, angiogenesis, and extracellular matrix remodeling. Therapeutic Potential: Due to its regenerative and reparative properties, BMP-7 has attracted significant attention as a potential therapeutic agent. It has been investigated for its applications in bone regeneration, cartilage repair, and the treatment of kidney and liver diseases. Clinical trials exploring the therapeutic efficacy of BMP-7 are ongoing. Challenges and Future Perspectives: Despite the promising therapeutic potential of BMP-7, challenges remain, including optimizing its delivery systems, understanding its dosage and duration of treatment, and managing potential side effects. Future research should focus on unraveling the intricate mechanisms of BMP-7 signaling, developing targeted therapies, and enhancing its clinical applications.

References for protein:

1. Title: Pulpal and periapical response of dogs' teeth after pulpotomy and use of recombinant human bone morphogenetic protein-7 as a capping agent Publications: J Dent Child 74 (2007): 79-84. Link: http://www.researchgate.net/profile/Francisco_Paula-Silva/publication/5374974_Pulpal_and_periapical_response_of_dogs'teeth_after_pulpotomy_and_use_of_recombinant_human_bone_morphogenetic_protein-7_as_a_capping_agent/links/5413605e0cf2788c4b359755.pdf
2. Title: Pretreatment with Bone Morphogenetic Protein-7 (BMP-7) Mimics Ischemia Preconditioning Following Intestinal Ischemia/Reperfusion Injury in The Intestine and Liver Publications: Shock (Augusta, Ga.) 30.5 (2008): 532. Link: BMP 7 prospec publication
3. Title: BMP-7 blocks mesenchymal conversion of mesothelial cells and prevents peritoneal damage induced by dialysis fluid exposure Publication: Nephrology Dialysis Transplantation (2010): gfp618. Link: BMP 7 Human prospec publication