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BMP6 Human

Bone Morphogenetic protein-6 Human Recombinant
CYK0092

Product Overview

Name	BMP6 Human
Description	
Bone Morphogenetic protein-6 Human Recombinant	
Accession (Primary)	P22004
Immunogen	
Anti-human BMP7 mAb, is derived from hybridization of mouse SP2/O myeloma cells with spleen cells from BALB/c mice immunized with Recombinant human BMP7 amino acids 293-431 purified from E. coli.	
Synonyms	
Osteogenic Protein 1, OP-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.	
Physical Appearance	
Sterile Filtered colorless solution.	
Formulation	
1mg/ml containing PBS, pH-7.4, & 0.1% Sodium Azide.	
Applications	
BMP7 antibody has been tested by ELISA and Western blot analysis to assure specificity and reactivity. Since application varies, however, each investigation should be titrated by the reagent to obtain optimal results. Recommended dilution range for Western blot analysis is 1:500 ~ 2,000. Recommended starting dilution is 1:1,000.	
Type	
Mouse Anti Human Monoclonal.	
Clone	
P4E7AT.	

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Ig Subclass

Mouse IgG1 heavy chain and ? light chain.

Purification Method

BMP7 antibody was purified from mouse ascitic fluids by protein-G affinity chromatography.

Storage Procedures

For periods up to 1 month store at 4°C, for longer periods of time, store at -20°C. Prevent freeze thaw cycles.

Stability / Shelf Life

12 months at -20°C. 1 month at 4°C.

Precautions

BMP6 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P22004)

Background

Bone Morphogenetic Protein-6 Human Recombinant: Unraveling its Therapeutic Potential in Tissue Engineering and Regenerative Medicine Abstract: Bone Morphogenetic Protein-6 (BMP-6) human recombinant is a critical member of the bone morphogenetic protein family, known for its pivotal role in tissue development, repair, and regeneration. This research paper aims to provide a comprehensive analysis of BMP-6, including its characteristics, signaling pathways, and potential therapeutic applications. Moreover, innovative methodologies for the production and optimization of BMP-6 human recombinant are proposed, shedding light on its future implications in the field of tissue engineering and regenerative medicine. Introduction: Tissue engineering and regenerative medicine have emerged as promising approaches to address the challenges associated with tissue repair and regeneration. BMP-6, a prominent member of the BMP family, plays a key role in regulating cellular responses during tissue development and healing. This paper explores the distinctive features of BMP-6 and presents novel approaches for the production and optimization of BMP-6 human recombinant, aiming to unlock its therapeutic potential in diverse regenerative contexts. Characteristics and Signaling Pathways: BMP-6 is a secreted growth factor belonging to the transforming growth factor-beta (TGF-?) superfamily. It exerts its biological effects by binding to specific cell surface receptors, initiating intricate intracellular signaling pathways. BMP-6 signaling cascades, including Smad-dependent and Smad-independent pathways, orchestrate critical processes such as cell differentiation, proliferation, and extracellular matrix synthesis, thereby influencing tissue development and repair. Production of BMP-6 Human Recombinant: Efficient production methodologies are vital for harnessing the therapeutic potential of BMP-6 human recombinant. Recombinant protein

expression systems, including mammalian cells or baculovirus-insect cell systems, have been employed for the production of functional BMP-6. Optimization strategies, such as codon optimization, signal peptide engineering, and protein folding enhancement, have been implemented to enhance the yield and bioactivity of BMP-6 recombinant protein. Potential Therapeutic Applications: BMP-6 human recombinant holds immense promise in the field of tissue engineering and regenerative medicine. Its regulatory role in bone formation, cartilage regeneration, and wound healing positions it as a potential therapeutic candidate for the treatment of skeletal disorders, osteoarthritis, and tissue injuries. Furthermore, the ability of BMP-6 to modulate cell behavior and tissue remodeling indicates its wider therapeutic applications in various regenerative processes. Conclusion: BMP-6 human recombinant emerges as a crucial regulator in tissue engineering and regenerative medicine, offering significant potential for tissue repair and regeneration. Optimizing production methodologies and further unraveling its signaling mechanisms will undoubtedly enhance its therapeutic applications. Given its involvement in bone and cartilage formation, as well as wound healing, BMP-6 human recombinant represents a valuable tool for promoting tissue regeneration and addressing the unmet clinical needs in regenerative medicine.

References for protein:

Bibliography: Balemans W, Van Hul W. Extracellular regulation of BMP signaling in vertebrates: a cocktail of modulators. Dev Biol. 2002;250(2):231-250. Celeste AJ, Iannazzi JA, Taylor RC, et al. Identification of transforming growth factor-beta family members present in bone-inductive protein purified from bovine bone. Proc Natl Acad Sci U S A. 1990;87(24):9843-9847. Heldin CH, Moustakas A. Signaling receptors for TGF-? family members. Cold Spring Harb Perspect Biol. 2016;8(8):a022053. Macías-Silva M, Hoodless PA, Tang SJ, et al. MADR2 is a substrate of the TGFbeta receptor and its phosphorylation is required for nuclear accumulation and signaling. Cell. 1996;87(7):1215-1224. ten Dijke P, Yamashita H, Ichijo H, Franzen P, Laiho M, Miyazono K. Characterization of type I receptors for transforming growth factor-beta and activin. Science. 1994;264(5155):101-104.