

CTGF Human

Connective Tissue Growth Factor Human Recombinant

GRF0019

Product Overview

Name	CTGF Human
Accession(Primary)	P29279
Description	Connective Tissue Growth Factor Human Recombinant

Target information (P29279)

Gene Name

About Gene Symbol

Background

Title: Connective Tissue Growth Factor Human Recombinant: Insights into Production, Function, and Therapeutic Potential Abstract: Connective tissue growth factor (CTGF) is a multifunctional protein that plays a critical role in tissue homeostasis and repair. This research paper provides a comprehensive analysis of human recombinant CTGF, focusing on its production, characterization, and potential therapeutic applications. The paper discusses the significance of CTGF in connective tissue development, fibrosis, and wound healing. Furthermore, it explores the ongoing research and clinical trials investigating the therapeutic potential of recombinant CTGF in various pathological conditions. The information presented in this paper aims to deepen our understanding of human recombinant CTGF and its utility as a research tool and a potential therapeutic agent. Introduction: Connective tissue growth factor (CTGF) is a secreted protein that belongs to the CCN (Cyr61, CTGF, Nov) family. It is involved in diverse cellular processes, including cell proliferation, extracellular matrix synthesis, and angiogenesis. Human recombinant CTGF, produced through genetic engineering techniques, enables researchers to study its biological functions and explore its therapeutic potential. Production and

Characterization: Recombinant CTGF is typically generated using expression systems such as mammalian cells or bacteria. The protein is then purified and characterized to ensure its structural integrity and functional activity. Quality control measures are implemented to confirm the specificity and biological activity of the recombinant CTGF. Role in Tissue Homeostasis and Repair: CTGF plays a critical role in connective tissue development, maintenance, and repair. It promotes the synthesis of extracellular matrix components, such as collagen and fibronectin, and regulates the activity of various growth factors. CTGF is also involved in wound healing and tissue remodeling processes. Understanding the molecular mechanisms underlying CTGF-mediated tissue repair provides insights into potential therapeutic interventions. Therapeutic Implications: The dysregulation of CTGF expression and signaling has been implicated in several pathological conditions, including fibrosis, arthritis, and cancer. Recombinant CTGF holds promise as a potential therapeutic agent for these diseases. Preclinical and clinical studies are being conducted to evaluate the safety and efficacy of CTGF-based therapies, such as CTGF-targeting antibodies and small-molecule inhibitors. Conclusion: Human recombinant CTGF is a valuable research tool and a potential therapeutic target in various pathological conditions. Its production, characterization, and applications in connective tissue biology contribute to our understanding of tissue repair mechanisms and the development of novel therapeutic strategies. Continued research and clinical trials exploring the therapeutic potential of recombinant CTGF offer promising avenues for improving patient outcomes.

References for protein:

Bibliography: Leask, A., & Abraham, D. J. (2003). TGF- β signaling and the fibrotic response. *FASEB Journal*, 18(7), 816-827. Grotendorst, G. R., & Duncan, M. R. (2005). Individual domains of connective tissue growth factor regulate fibroblast proliferation and myofibroblast differentiation. *The FASEB Journal*, 19(7), 729-738. Brigstock, D. R. (2003). The connective tissue growth factor/cysteine-rich 61/nephroblastoma overexpressed (CCN) family. *Endocrine Reviews*, 24(2), 61-79. Mendoza, F. A., & Piera-Velazquez, S. (2018). Role of connective tissue growth factor (CTGF/CCN2) in osteoarthritis. *Frontiers in Biology*, 13(2), 63-69. Abreu, J. G., Ketpura, N. I., Reversade, B., et al. (2002). Connective-tissue growth factor (CTGF) modulates cell signaling by BMP and TGF- β . *Nature Cell Biology*, 4(8), 599-604.