

TGFB1 Human Recombinant

Transforming Growth Factor-Beta 1 Human Recombinant

GRF0388

Product Overview

Name	TGFB1 Human Recombinant
Accession(Primary)	P01137
Description	Transforming Growth Factor-Beta 1 Human Recombinant

Target information (P01137)

Gene Name

About Gene Symbol

TGFB1 (Transforming Growth Factor Beta 1) is a formin actin nucleator involved in TGF- β signaling. It is an important research target in immunology, inflammation, and cancer research and is widely studied to elucidate cellular mechanisms and identify therapeutic targets.

Background

Title: Transforming Growth Factor-Beta 1 Human Recombinant: A Promising Tool for Biomedical

Research Abstract: Transforming Growth Factor-Beta 1 (TGF- β 1) is a crucial cytokine involved in diverse cellular processes. This research paper provides an in-depth analysis of human recombinant TGF- β 1, focusing on its production, purification, and applications in biomedical research. The paper discusses the significance of TGF- β 1 in tissue engineering, regenerative medicine, and immunology. Furthermore, it elucidates the potential therapeutic implications of recombinant TGF- β 1 in various diseases and highlights ongoing research in the field. The information presented in this paper aims to enhance the understanding of TGF- β 1 and its utility as a research tool in biomedical sciences. Introduction:

Transforming Growth Factor-Beta 1 (TGF- β 1) is a multifunctional cytokine that regulates cellular

processes such as cell growth, differentiation, and immune modulation. Human recombinant TGF- β 1 is synthesized using genetic engineering techniques, enabling the production of large quantities of biologically active protein for research purposes. Production and Purification: Recombinant TGF- β 1 is typically produced in expression systems such as bacteria, yeast, or mammalian cells. The protein is then purified using various chromatographic techniques to obtain a highly pure and active form. Quality control measures ensure the biological activity and integrity of the recombinant protein. Biomedical Applications: Human recombinant TGF- β 1 has found broad applications in biomedical research. In tissue engineering and regenerative medicine, it plays a critical role in promoting cell proliferation, extracellular matrix production, and tissue repair. TGF- β 1 is also involved in immune modulation, influencing immune cell differentiation and function. Recombinant TGF- β 1 is a valuable tool for studying these processes and developing therapeutic interventions. Therapeutic Implications: The dysregulation of TGF- β 1 signaling is associated with various diseases, including fibrosis, cancer, and autoimmune disorders. Recombinant TGF- β 1 offers potential therapeutic applications through its ability to modulate cellular responses. Ongoing research aims to develop targeted therapies that specifically regulate TGF- β 1 signaling for the treatment of these conditions. Conclusion: Human recombinant TGF- β 1 holds immense potential as a research tool in biomedical sciences. Its production, purification, and applications in tissue engineering, regenerative medicine, and immunology contribute to advancing our understanding of cellular processes and disease mechanisms. With ongoing research, recombinant TGF- β 1 may pave the way for novel therapeutic strategies in various medical fields.

References for protein:

Bibliography: de Caestecker, M., Piek, E., & Roberts, A. B. (2021). Role of transforming growth factor-betas in human disease. *Handbook of Experimental Pharmacology*, 267, 1-51. Akhurst, R. J., & Hata, A. (2012). Targeting the TGF β signalling pathway in disease. *Nature Reviews Drug Discovery*, 11(10), 790-811. Chen, G., Deng, C., & Li, Y. P. (2019). TGF- β and BMP signaling in osteoblast differentiation and bone formation. *International Journal of Biological Sciences*, 15(11), 2132-2142. Varelas, X. (2014). The Hippo pathway effectors TAZ and YAP in development, homeostasis and disease. *Development*, 141(8), 1614-1626. Chen, C. C., & Lau, L. F. (2009). Functions and mechanisms of action of CCN matricellular proteins. *International Journal of Biochemistry and Cell Biology*, 41(4), 771-783.