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Activin B Human Active

Activin-B Human Recombinant, Active

GRF0004

Product Overview

Name	Activin B Human Active
Catalog #	GRF0004
Accession(Primary)	P09529
Description	Activin-B Human Recombinant, Active
Precautions	

Target information(P09529)

Synonyms

Gene ID

Other Names

Function

Cellular location

Note

Background

An Investigation into the Functional Roles and Therapeutic Potential of Activin-B Human Recombinant, Active 1. Abstract Activin-B Human Recombinant, Active, also referred to as beta-2, Activin beta-B chain, or MGC157939, is a crucial component of the Transforming Growth Factor-beta (TGF-beta) superfamily. The multifaceted nature of this protein implicates it in numerous physiological processes. This paper delves into the bioactivity of Activin-B, exploring its role in cellular proliferation, differentiation, apoptosis, and its potential for therapeutic applications, especially in the realms of regenerative medicine, reproductive health, and cancer therapy. 2. Introduction The TGF-beta superfamily, of which Activin-B is a member, is renowned for its far-reaching implications in cell and developmental biology. This superfamily boasts members that control cell growth, differentiation, and apoptosis, thus playing vital roles in

organogenesis, bone growth, and reproductive functions. This research paper aims to shed light on the characteristics and potential therapeutic applications of Activin-B. 3. Structure and Synthesis of Activin-B Activin-B is a dimeric protein, composed of two identical beta-B chains. This homodimer undergoes multiple stages of synthesis, starting as a precursor protein, which then experiences proteolytic processing to eventually form the mature peptide. It is this coordinated activity of various enzymes and molecular chaperones that ensure the accurate biosynthesis of Activin-B. 4. Biological Functions of Activin-B Activin-B's roles extend from embryogenesis and organogenesis to the modulation of reproductive functions. Its influence over cellular proliferation, differentiation, and apoptosis has significant repercussions in physiological and pathological scenarios. Its regulatory functions also encompass immunomodulation and wound healing, underpinning its extensive biological reach. 5. Activin-B in Regenerative Medicine Regenerative medicine's primary focus is the repair and regeneration of tissues, and it is here that the potential of Activin-B shines. The protein's capacity to regulate cellular processes positions it as a possible agent in tissue repair, making it an intriguing research topic for therapeutic applications in regenerative medicine. 6. Activin-B and Reproductive Health Activin-B’s role in reproductive health is undeniable, having been implicated in follicular development, ovulation, and pregnancy maintenance. Its potent influence on reproductive functions indicates the possibility of its use in the treatment of reproductive disorders, providing a potential pathway for further therapeutic development. 7. Activin-B in Cancer Recent research has connected the deregulation of Activin-B to various types of cancer. Deciphering the mechanisms through which Activin-B affects cancer cell proliferation and survival could open up new avenues for targeted cancer therapy. This critical linkage emphasizes the need for comprehensive studies on Activin-B's role in oncogenesis. 8. Conclusion and Future Perspectives Our understanding of Activin-B's biological functions has grown immensely, but many mysteries remain. The continued exploration of the molecular mechanisms through which Activin-B operates will undoubtedly yield more insights into its potential therapeutic uses, guiding the development of new treatments for a myriad of diseases.