9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

# TGFB3 Human

*Transforming Growth Factor-Beta 3 Human Recombinant*
*GRF0395*

## Product Overview

| | |
|---|---|
| Name | TGFB3 Human |
| **Description** | |
| Transforming Growth Factor-Beta 3 Human Recombinant | |
| Accession (Primary) | P10600 |
| **Synonyms** | |
| Transforming Growth Factor-beta3, TGFB3, ARVD, FLJ16571, TGF-beta3. | |
| **Introduction** | |
| Transforming growth factor betas (TGF Betas) mediate many cell-cell interactions that occur during embryonic development. Three TGF Betas have been identified in mammals. TGF Beta 1, TGF Beta 2 and TGF Beta 3 are each synthesized as precursor proteins that are very similar in that each is cleaved to yield a 112 amino acid polypeptide that remains associated with the latent portion of the molecule. | |
| **Source** | |
| Escherichia Coli. | |
| **Physical Appearance** | |
| Sterile Filtered clear solution. | |
| **Formulation** | |
| The protein solution contains 20% Ethanol and 10mM Acetic acid (AcOH). | |
| **Stability** | |
| TGF-beta 3 although stable at room temperature for 1 week, should be stored at 4°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). | |
| **Purity** | |
| Greater than 95.0% as determined by SDS-PAGE. | |
| **Amino acid sequence** | |
| MALDTNYCFRN LEENCCVRPL YIDFRQDLGW KWVHEPKGYY ANFCSGPCPY LRSADTTHST VLGLYNTLNP EASASPCCVP QDLEPLTILY YVGRTPKVEQ LSNMVVKSCK CS. | |
| **Biological Activity** | |
| The activity is determined by the ability to induce chondrogenic differentiation. | |
| **Background** | |

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TGFB3 (207 a.a.) Human About TGFB3 (207 a.a.) Human: Transforming growth factor beta-3 (also known as TGF-β3) is a cytokine encoded by the TGFB3 gene that belongs to the transforming growth factor beta superfamily. It plays a significant role in cell differentiation, embryogenesis, and development by regulating molecules involved in cell adhesion and extracellular matrix formation. TGF-β3 is necessary for palate development, as its absence causes clefting. In addition, it controls lung development and wound healing processes by regulating cell adhesion and movement in the respective tissues. Together, TGF-β3 coordinates a variety of cellular processes that are critical for mammalian embryonic development and tissue homeostasis. In this article we will explore the features and applications of TGFB3 Human Recombinant Protein, expanding on its significance in in advanced research pursuits. Description: TGFB3 Human Recombinant protein encodes amino acids 644-850 and total molecular mass of 50 kDa (Including GST Tag). As TGFB3 Human derives from Escherichia Coli, it appears as a sterile filtered clear solution and is formulated as 100 µl of purified human TGF Beta 3 protein at 100 µg/ml. In addition, its protein is formulated in a solution comprising 50mM Tris-Acetate (pH 7.5), 1mM EDTA, and 20% Glycerol. In terms of stability, TGF-beta 3 Human Recombinant is stable at 4°C for up to a week. However, it is preferable to store at -20°C. However, if you are looking to store it for a long term it is preferable to add a carrier protein (0.1% HSA or BSA). Activation: While TGF-β plays a crucial role regulating essential cell functions, its activation pathways is still being explored and understood. Some pathways are specific to certain cells or tissues, while others are more widespread. Factors like proteases, integrins, pH, and reactive oxygen species can activate TGF-β. Disruptions in these factors can lead to uncontrolled TGF-β signaling, causing issues like inflammation, autoimmune diseases, and cancer. Applications and Usage: TGFB3 (207 a.a.) Human is intended for laboratory research, serving as an important tool in stem cell differentiation as well as T-cell regulation and differentiation. Accordingly, its versatility extends to applications such as ELISA, Western Blotting, and Inhibition Assays, offering different avenues for discovery and research. Safety Information: TGFB3 (207 a.a.) Human is intended for use only in laboratory research, in accordance with safety guidelines. It emphasizes adherence to ethical and regulatory norms and is not intended for use as household chemicals, pharmaceuticals, agricultural products, or food additives.

## References

1. Title : Altering the Architecture of Tissue Engineered Hypertrophic Cartilaginous Grafts Facilitates Vascularisation and Accelerates Mineralisation Publication : DOI: 10.1371/journal.pone.0090716, March 04, 2014 Link : TGFB3 prospec publication 2. Title: Oxygen tension differentially regulates the functional properties of cartilaginous tissues engineered from infrapatellar fat pad derived MSCs and articular chondrocytes Publication: Osteoarthritis and Cartilage 18.10 (2010): 1345-1354. Link: TGF-beta3 prospec publication

## Protein content

Protein quantitation was carried out by two independent methods: 1. UV spectroscopy at 280 nm using the absorbency value of 1.718 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics). 2. Analysis by RP-HPLC, using a calibrated solution of TGF-b 3 as a Reference Standard.

## Precautions

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TGFB3 Human is for research use only and not for use in diagnostic or therapeutic procedures.

## Target Information: ( P10600 )

## Background

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### *References for protein:*

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