

# Rat / Mouse TGF-beta 1 / TGFB1 Protein

Catalog Number: 80116-RNAH



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

TGFB1

### Protein Construction:

A DNA sequence encoding the rat TGFB1 (Ala279-Ser390) was expressed. Rat and Mouse mature TGFB1 sequences are identical.

**Source:** Rat

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 90 % as determined by SDS-PAGE

### Bio Activity:

Measured by its ability to inhibit cell proliferation of Mv-1-lu mink lung epithelial cells. The  $ED_{50}$  for this effect is 0.2-0.8 ng/mL.

### Endotoxin:

< 1.0 EU per  $\mu$ g of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Ala 279

### Molecular Mass:

The recombinant rat TGFB1 comprises 112 amino acids and predicts a molecular mass of 12.8 kDa.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

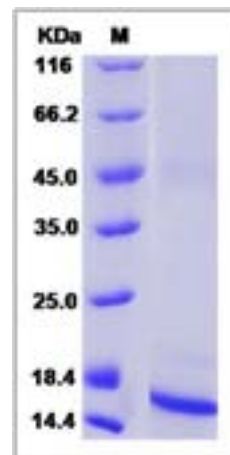
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

TGF-beta 1 is a member of the transforming growth factor beta (TGF-beta) family. The transforming growth factor-beta family of polypeptides are involved in the regulation of cellular processes, including cell division, differentiation, motility, adhesion and death. TGF-beta 1 positively and negatively regulates many other growth factors. It inhibits the secretion and activity of many other cytokines including interferon- $\gamma$ , tumor necrosis factor-alpha and various interleukins. It can also decrease the expression levels of cytokine receptors. Meanwhile, TGF-beta 1 also increases the expression of certain cytokines in T cells and promotes their proliferation, particularly if the cells are immature. TGF-beta 1 also inhibits proliferation and stimulates apoptosis of B cells, and plays a role in controlling the expression of antibody, transferrin and MHC class II proteins on immature and mature B cells. As for myeloid cells, TGF-beta 1 can inhibit their proliferation and prevent their production of reactive oxygen and nitrogen intermediates. However, as with other cell types, TGF-beta 1 also has the opposite effect on cells of myeloid origin. TGF-beta 1 is a multifunctional protein that controls proliferation, differentiation and other functions in many cell types. It plays an important role in bone remodeling as it is a potent stimulator of osteoblastic bone formation, causing chemotaxis, proliferation and differentiation in committed osteoblasts. Once cells lose their sensitivity to TGF-beta1-mediated growth inhibition, autocrine TGF-beta signaling can promote tumorigenesis. Elevated levels of TGF-beta1 are often observed in advanced carcinomas, and have been correlated with increased tumor invasiveness and disease progression.

## References

1. Ghadami M, *et al.* (2000) Genetic Mapping of the Camurati-Engelmann Disease Locus to Chromosome 19q13.1-q13.3. *Am J Hum. Genet.* 66(1):143-7.
2. Letterio J, *et al.* (1998) Regulation of immune responses by TGF-beta. *Annu Rev Immunol.* 16:137-61.
3. Vaughn SP, *et al.* (2000) Confirmation of the mapping of the Camurati-Engelmann locus to 19q13. 2 and refinement to a 3.2-cM region. *Genomics.* 66(1):119-21.

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