

Human / Rhesus / Cynomolgus / Canine TGF-beta 1 / TGFB1 Protein

Catalog Number: 10804-HNAC



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

TGFB1

Protein Construction:

A DNA sequence encoding the active form of human / rhesus / cynomolgus / canine TGFB1 (NP_000651.3) (Ala 279-Ser 390) was expressed and purified. Human, Rhesus, cynomolgus and Canine TGFB1 sequences are identical.

Source: Human, Rhesus, Cynomolgus, Canine

Expression Host: CHO Stable Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE.

Bio Activity:

1. Measured by its ability to inhibit cell proliferation of Mv-1-lu mink lung epithelial cells. The ED50 for this effect is typically 0.01-0.1 ng/mL.

2. Human liver cancer organoids were cultured with FGF2 (Cat#10014-HNAE), HGF (Cat#10463-HNAS), FGF7 (Cat#10210-H07E), EGF (Cat#50482-MNCH), FGF10 (Cat#10573-HNAE), TGFB1 (Cat#10804-HNAC), NOG (Cat#50688-M02H), RSP01 (Cat#11083-HNAS). (Routinely tested). Data provided by D1 Medical Technology.

3. Western blot analysis of extracts from serum-starved Hela, untreated (line A) or treated with TGF beta 1 (10804-HNAC) (5 ng/mL, 120min; +) (line B), using Phospho-SMAD2 (Ser465, 467) rabbit monoclonal Antibody (Cat: 110472-R0010) at 1:1000 dilution (upper) or Anti-SMAD2 Antibody, Rabbit polyclonal (Cat: 50727-T58) at 1:100000 dilution (lower) (Routinely tested).

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Predicted N terminal: Ala 279

Molecular Mass:

The recombinant human / rhesus / cynomolgus / canine TGFB1 consists of 112 amino acids and has a calculated molecular mass of 12.8 kDa. It migrates as an approximately 13 & 26 kDa band in reduced and non-reduced SDS-PAGE respectively, corresponding to the monomer and homodimer.

Formulation:

Lyophilized from sterile 100mM GLY, 10mM NaCl, pH 3.0

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

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

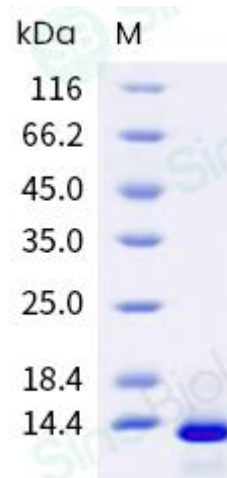
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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-γ, 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.