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

Catalog Number: 10804-HNAC

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CED; DPD1; LAP; TGF-beta 1; TGFB; TGFbeta

Protein Construction:

A DNA sequence encoding the active form of human/rhesus/canine TGFβ1 (NP_000651.3) (Ala 279-Ser 390) was expressed and purified. Human, Rhesus, cynomolgus and Canine TGFβ1 sequences are identical.

Source: Human

Expression Host: CHO Stable Cells

QC Testing

Purity: > 95 % as determined by HPLC.

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 typically 0.04-0.2 ng/mL.

Endotoxin:

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

Stability:

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

Predicted N terminal: Ala 279

Molecular Mass:

The recombinant human/rhesus/canine TGFβ1 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

Storage:

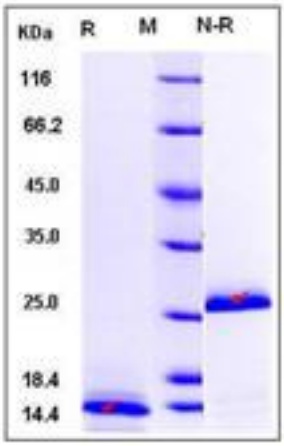
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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 1can 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-Englemann locus to 19q13. 2 and refinement to a 3.2-cM region. Genomics. 66(1):119-21.