

Latent TGF beta 1 Protein, Human, Recombinant (His)

General Information

Synonyms:	CED;DPD1;transforming growth factor, beta 1;TGF β 1;LAP;TGFB;TGFbeta;TGF-beta 1;TGF- β 1;TGF β ;transforming growth factor, β 1
Protein Construction:	A DNA sequence encoding the full length of human TGF β 1 (NP_000651.3) (Met 1-Ser 390) was fused with a C-terminal polyhistidine tag. Predicted N terminal: Leu 30 & Ala 279
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P01137
Molecular Weight:	42.4 kDa (predicted); 16, 38 and 55 kDa (reducing condition, due to glycosylation); 110 kDa (non-reduced condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized Human TGF beta 1 His at 2 μ g/ml (100 μ l/well) can bind Human TGFBR2 His & hFc, the EC50 of Human TGFBR2 His & hFc is 5-35 ng/mL.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

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- α and various interleukins. It can also decrease the expression levels of cytokine receptors. Meanwhile, TGF- β 1 also increases the expression of certain cytokines in T cells and promotes their proliferation, particularly if the cells are immature. TGF- β 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- β 1 can inhibit their proliferation and prevent their production of reactive oxygen and nitrogen intermediates. However, as with other cell types, TGF- β 1 also has the opposite effect on cells of myeloid origin. TGF- β 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- β 1-mediated growth inhibition, autocrine TGF- β signaling can promote tumorigenesis. Elevated levels of TGF- β 1 are often observed in advanced carcinomas, and have been correlated with increased tumor invasiveness and disease progression.

Cancer Immunotherapy
Immune Checkpoint Immunotherapy
Targeted Therapy

Reference

- 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.
- Luo H, Yang S, Deng P, et al. Network pharmacology combined with transcriptomics reveals that formononetin, a biologically component of *Astragalus membranaceus* (Fisch.) Bunge, inhibits the PI3K/Akt signaling pathway to improve chronic renal failure. *Journal of Ethnopharmacology.* 2024: 119041.
- Letterio J, et al. (1998) Regulation of immune responses by TGF- β . *Annu Rev Immunol.* 16:137-61.
- 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.
- Assoian R, et al. (1983) Transforming growth factor- β in human platelets. Identification of a major storage site, purification, and characterization. *J Biol Chem.* 258(11):7155-60.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481