

Recombinant Human TGF- β 1 Protein

Catalog Number: TL-643

Product name

Generic names	Recombinant Human TGF- β 1 Protein
Gene Name Synonym	Transforming Growth Factor- β 1, Differentiation inhibiting factor, Cartilage-inducing factor, CED Protein, DPD1 Protein, LAP Protein, TGFB Protein

Product information

Construction	A DNA sequence encoding the human TGF- β 1 (NP_000651.3) was expressed with an Fc tag at the C-terminus.
Source	Human
Expression Host	HEK293 cells
QC Testing Purity	> 90 % as determined by SDS-PAGE
Bio Activity	The ED ₅₀ , determined by its ability to inhibit the IL-4-dependent proliferation of HT-2 mouse T cells, is \leq 0.1 ng/ml.
Endotoxin	< 0.1EU per μ g of the protein as determined by the LAL method.
Molecular Mass	The recombinant human TGF- β 1 consists of 113 amino acids and predicts a molecular mass of 13.6 KDa.
Formulation	Lyophilized from 0.22 μ m filtered solution in Glycine-HCl, pH 3.0. Normally 6%-8% trehalose, mannitol are added as protectants before lyophilization.
Stability & Storage	Samples are stable for up to 24 months from date of receipt at 4 °C. Recommend to aliquot the protein into smaller quantities for optimal storage. Avoid repeated freeze-thaw cycles.

Background

The three mammalian isoforms of TGF- β , TGF- β 1, β 2, and β 3, signal through the same receptor and elicit similar biological responses. They are multifunctional cytokines that regulate cell proliferation, growth, differentiation and motility, as well as synthesis and deposition of the extracellular matrix. They are involved in various physiological processes, including embryogenesis, tissue remodeling and wound healing. They are secreted predominantly as latent complexes, which are stored at the cell surface and in the extracellular matrix. The release of biologically active TGF- β isoform from a latent complex involves proteolytic processing of the complex and/or induction of conformational changes by proteins such as thrombospondin-1. TGF- β 1 is the most abundant isoform secreted by almost every cell type. It was originally identified for its ability to induce phenotypic transformation of fibroblasts, and recently it has been implicated in the formation of skin tumors.

References

1. Woolard J. et al. (2004) VEGF165b, an inhibitory vascular endothelial growth factor splice variant: mechanism of action, in vivo effect on angiogenesis and endogenous protein expression. *Cancer Res.* 64(21): 7822-7835.
2. Jia SF, et al. (2008) VEGF165 is necessary to the metastatic potential of Fas(-) osteosarcoma cells but will not rescue the Fas(+) cells. *JExp Ther Oncol.* 7(2): 89-97.
3. Cimpean AM, et al. (2008) Vascular endothelial growth factor A (VEGF A) as individual prognostic factor in invasive breast carcinoma. *Rom J Morphol Embryol.* 49(3): 303-8.