

# Recombinant Human TGF beta 1 protein(His Tag)

Catalog Number: PKSH034147



**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

## Description

<b>Species</b>	Human
<b>Mol_Mass</b>	13.7 kDa
<b>Accession</b>	P01137
<b>Bio-activity</b>	Measure by its ability to inhibit the IL-4 dependent proliferation in HT-2 cells. The ED <sub>50</sub> for this effect is <0.1 ng/mL. The specific activity of recombinant human TGF beta 1 is approximately >5 x 10 <sup>7</sup> IU/mg. Measure by its ability to induce proliferation in MCF-7 cells. The ED <sub>50</sub> for this effect is <3.2 ng/mL.

## Properties

<b>Purity</b>	> 98 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 0.1 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80 °C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 20 mM sodium citrate, 0.2 M NaCl, pH 4.5. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## 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-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. 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.

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Tel:400-999-2100

Email:[techsupport@elabscience.cn](mailto:techsupport@elabscience.cn)

Web:[www.elabscience.cn](http://www.elabscience.cn)

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