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# Human TGF- $\beta$ 1 Recombinant Protein



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20  $\mu$ g

**For Research Use Only. Not for Use in Diagnostic Procedures.**

**MW (kDa):**  
25.6

**UniProt ID:**  
#P01137

**Entrez-Gene Id:**  
7040

## Background

TGF- $\beta$ 1 activities include proliferation, angiogenesis, and promotion or inhibition of many immune events (1-3). TGF- $\beta$ 1 is produced by a number of cell types, including regulatory T cells, fibroblasts, epithelial cells, and endothelial cells (3). TGF- $\beta$ 1 binds to T $\beta$ RII homodimer, which then complexes with T $\beta$ RI homodimer (1,4). The oligomeric receptor complex phosphorylates subsets of the SMAD proteins that then act to induce and repress a number of target genes (1,3,4). TGF- $\beta$ 1 binding can also activate the Erk2, p38, and JNK pathways via TAK1 (4). TGF- $\beta$ 1 appears to promote late stage progression and metastasis in some cancers (1,2).

## Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1  $\mu$ g hTGF- $\beta$ 1.

## Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

## Source / Purification

Recombinant human TGF- $\beta$ 1 was expressed in CHO cells and is supplied in a lyophilized form.

## Bioactivity

The bioactivity of recombinant hTGF- $\beta$ 1 was determined in an IL-4 induced HT-2 cell proliferation assay. The ED<sub>50</sub> of each lot is less than or equal to 0.5 ng/mL.

## Background References

1. Siegel, P.M. and Massagué, J. (2003) *Nat Rev Cancer* 3, 807-21.
2. Bierie, B. and Moses, H.L. (2006) *Nat Rev Cancer* 6, 506-20.
3. Tian, M. and Schiemann, W.P. (2009) *Future Oncol* 5, 259-71.
4. Moustakas, A. and Heldin, C.H. (2009) *Development* 136, 3699-714.

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