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# Human Transforming Growth Factor $\beta$ 1 (hTGF- $\beta$ 1)

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

MW (kDa):	UniProt ID:	Entrez-Gene Id:
13	#P01137	7040
<b>Background</b>	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).	
<b>Endotoxin</b>	Less than 0.01 ng endotoxin/1 $\mu$ g hTGF- $\beta$ 1.	
<b>Purity</b>	>98% as determined by SDS-PAGE of 6 $\mu$ g reduced (+) and non-reduced (-) recombinant hTGF- $\beta$ 1. Less than 1% migrates as monomer hTGF- $\beta$ 1 under non-reduced (-) conditions. All lots are greater than 98% pure.	
<b>Source / Purification</b>	Recombinant human TGF- $\beta$ 1 (hTGF- $\beta$ 1) Ala279-Ser390 (Accession #P01137) was expressed in human 293 cells at Cell Signaling Technology.	
<b>Bioactivity</b>	The bioactivity of recombinant hTGF- $\beta$ 1 was determined by assessing inhibition of IL-4 induced HT-2 cell proliferation. The ED <sub>50</sub> of each lot is between 40-800 pg/ml.	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Siegel, P.M. and Massagué, J. (2003) <i>Nat Rev Cancer</i> 3, 807-21.</li> <li>2. Bierie, B. and Moses, H.L. (2006) <i>Nat Rev Cancer</i> 6, 506-20.</li> <li>3. Tian, M. and Schiemann, W.P. (2009) <i>Future Oncol</i> 5, 259-71.</li> <li>4. Moustakas, A. and Heldin, C.H. (2009) <i>Development</i> 136, 3699-714.</li> </ol>	

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