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## Product Data Sheet

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Product Name: TGFB1 Human  
 Cat. No.: GP20944  
 Batch No.: 1

### Product Data

Purity	>98%	Source	Human
Physical Appearance	solid	Shipping Condition	
Synonyms	TGF-beta-1; CED; DPD1; TGFB; TGF-b1; TGFB1; CEDLAP; latency-associated peptide; TGF beta; TGF-beta 1 protein; transforming growth factor beta-1		
Formulation	Sterile 20 mM sodium citrate(pH=2.5) buffer with protein concentration of 0.1 mg/mL.This solution can be diluted into other aqueous buffers.		

### Introduction

TGF- $\beta$ 1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF- $\beta$ 1 superfamily that share a characteristic cystine knot structure. TGF- $\beta$ 1, -2 and -3 are highly pleiotropic cytokines that act as cellular switches to regulate processes such as immune function, proliferation and epithelial-mesenchymal transition. Each TGF- $\beta$  isoform has some non-redundant function; for TGF- $\beta$ 1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation and died of overwhelming inflammation. TGF- $\beta$ 1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF- $\beta$  RII. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF- $\beta$  RI (also called activin receptor-like kinase (ALK)-5), or alternatively, ALK-1. This complex phosphorylates and activates Smad proteins that regulate transcription.

### Biological Activity

ED<sub>50</sub> < 0.2 ng/ml, measured in ability to inhibit the mouse IL-4-dependent proliferation of HT-2 cells.

### Stability

Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3

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months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

### Background

TGF- $\beta$ 1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF- $\beta$ 1 superfamily that share a characteristic cystine knot structure. TGF- $\beta$ 1, -2 and -3 are highly pleiotropic cytokines that act as cellular switches to regulate processes such as immune function, proliferation and epithelial-mesenchymal transition. Each TGF- $\beta$  isoform has some non-redundant function; for TGF- $\beta$ 1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation and died of overwhelming inflammation. TGF- $\beta$ 1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF- $\beta$  RII. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF- $\beta$  RI (also called activin receptor-like kinase (ALK)-5), or alternatively, ALK-1. This complex phosphorylates and activates Smad proteins that regulate transcription.

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