

**DATASHEET**  
Version 20180730**TGF- $\beta$ 1, Human****Cat. No.:** Z03411-1**Size:** 1.0 mg

**Synonyms:** TGFB; TGFB1; TGF-beta 1 protein; TGFbeta 1; TGF-beta 1; TGFbeta; TGF-beta-1; transforming growth factor beta-1; transforming growth factor, beta 1; TGF- $\beta$ 1; TGF $\beta$ 1

**Description:**

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.

Recombinant Human TGF- $\beta$ 1 produced in CHO cells is a polypeptide chain containing 112 amino acids. A fully biologically active molecule, rhTGF- $\beta$ 1 has a molecular mass of 12 kDa, analyzed by reducing SDS-PAGE and is obtained by chromatographic techniques at GenScript.

**Amino Acid Sequence:**

00001 ALDTNYCF SSTEKNCC VRQLYIDF RKDLGWKW IHEPKGYH  
00041 ANFCLGPC PYIWSLDT QYSKVLAL YNQHNPGA SAAPCCVP

**Source:** CHO**Species:** Human

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

**Molecular Weight:** 12 kDa, observed by reducing SDS-PAGE.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered solution in 50mM NaAc, 50mM NaCl, pH 5.0.

**Reconstitution:** Reconstituted in ddH<sub>2</sub>O or 50mM Citrate at 100  $\mu$ g/ml.

**Purity:** > 95% as analyzed by reducing SDS-PAGE.

**Endotoxin Level:** < 0.2 EU/ $\mu$ g, determined by LAL method.

**Storage:** Lyophilized recombinant TGF- $\beta$ 1 remains stable for up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, Human TGF- $\beta$ 1 should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it's recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.