## Overview

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| **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-² 1; TGF² 1 |
| **Description** | TGF-² 1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF-² 1 superfamily that share a characteristic cystine knot structure. TGF-² 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-² isoform has some non-redundant function; for TGF-² 1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation and died of overwhelming inflammation. TGF-² 1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF-² RII. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF-² RI (also called activin receptor-like kinase (ALK)-5), or alternatively, ALK-1. This complex phosphorylates and activates Smad proteins that regulate transcription.<br>Recombinant Human TGF-² 1 produced in CHO cells is a polypeptide chain containing 112 amino acids. A fully biologically active molecule, rhTGF-² 1 has a molecular mass of 12 kDa, analyzed by reducing SDS-PAGE and is obtained by chromatographic techniques. |
| **Accession No** | P01137 |
| **Species** | Human |
| **Source** | *CHO* |
| **Biological Activity** | $ED_{50}$ < 0.2ng/mL, measured in ability to inhibit the mouse IL-4-dependent proliferation of HT-2 cells. |
| **Sequence** | ALDTNYCF SSTEKNCC VRQLYIDF RKDLGWKW IHEPKGYH<br>ANFCLGPC PYIWSLDT QYSKVLAL YNQHNPGA SAAPCCVP<br>QALEPLPI VYYVGRKP KVEQLSNM IVRSCKCS |

## Properties

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| **Measured Molecular Weight** | 12 kDa, observed by reducing SDS-PAGE. |
| **Purity** | > 95% as analyzed by reducing SDS-PAGE. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in 50mM NaAc, 50mM NaCl, pH 5.0. |
| **Reconstitution** | Reconstituted in dd$H_2O$ or 50mM Citrate at 100 µg/ml. |
| **Endotoxin Level** | < 0.2 EU/µg, determined by LAL method. |
| **Storage** | Lyophilized recombinant TGF-² 1 remains stable for up to 6 months at lower than -70°C from date of receipt. Upon reconstitution, Human TGF-² 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. |
| **Note** | For research use only |

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