

## TGF-beta 1 Protein, Bovine, Recombinant

### General Information

Synonyms:	TGF-beta-1;DPD1;TGFB1;TGFB;CEDLAP;transforming growth factor beta-1;TGF-b1;CED;TGF beta;TGF-beta 1 protein;latency-associated peptide
Protein Construction:	Ala279-Ser390
Species:	Bovine
Expression Host:	CHO Cells
Accession:	P18341
Molecular Weight:	12.8 kDa (monomer, predicted); 12 kDa (reducing conditions)

### QC Testing

Biological Activity:	ED 50 < 0.2 ng/ml, measured in ability to inhibit the mouse IL-4-dependent proliferation of HT-2 cells.
Purity:	≥ 95% as determined by SDS-PAGE
Endotoxin:	< 0.2 EU/μg of protein as determined by the LAL method.
Formulation:	Lyophilized from a 0.2 μm filtered solution in 50 mM NaAc, 50 mM NaCl, pH 5.0.

### Preparation and Storage

#### Reconstitution:

It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH<sub>2</sub>O or 50 mM Citrate up to 100 μg/ml.

#### Stability & Storage:

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 months at -20 °C. For long-term storage after reconstitution, it is recommended that a carrier protein (e.g., 0.1% BSA) be added. Avoid repeated freeze-thaw cycles by making single-use aliquots before the solution is stored at -20 °C.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

TGF-β1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF-β1 superfamily that share a characteristic cystine knot structure. TGF-β1, -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-β isoform has some non-redundant function; for TGF-β1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation and died of overwhelming inflammation. TGF-β1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF-β RII. This

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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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Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481