

## Recombinant Rat TGF-beta 3/TGFB3 Protein (His Tag)

**Catalog Number:** PDER100217

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

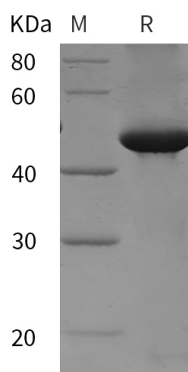
### Description

<b>Species</b>	Rat
<b>Source</b>	E.coli-derived Rat TGF-beta 3 protein Leu24-Ser412, with an N-terminal His
<b>Calculated MW</b>	42.7 kDa
<b>Observed MW</b>	50 kDa
<b>Accession</b>	Q07258
<b>Bio-activity</b>	Not validated for activity

### Properties

<b>Purity</b>	> 95% as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 10 EU/mg of the protein as determined by the LAL method
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with 5% Trehalose and 5% Mannitol.
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.5 mg/mL. Concentration is measured by UV-Vis.

### Data



SDS-PAGE analysis of Rat TGF-beta 3/TGFB3 proteins, 2 µg/lane of Recombinant Rat TGF-beta 3/TGFB3 proteins was resolved with SDS-PAGE under reducing conditions, showing bands at 50 kDa.

### Background

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Toll-free: 1-888-852-8623  
Web: [www.elabscience.com](http://www.elabscience.com)

Tel: 1-832-243-6086  
Email: [techsupport@elabscience.com](mailto:techsupport@elabscience.com)

Fax: 1-832-243-6017

TGF-beta 3 (transforming growth factor-beta 3) is a member of a TGF-beta superfamily subgroup that is defined by their structural and functional similarities. TGF-beta 3 and its closely related proteins, TGF-beta 1 and -beta 2, act as cellular switches to regulate immune function, cell proliferation, and epithelial-mesenchymal transition. The non-redundant biological effects of TGF-beta 3 include involvement in palatogenesis, chondrogenesis, and pulmonary development. Human TGF-beta 3 cDNA encodes a 412 amino acid (aa) precursor that contains a 20 aa signal peptide and a 392 aa proprotein. The proprotein is processed by a furin-like convertase to generate a 220 aa latency-associated peptide (LAP) and a 112 aa mature TGF-beta 3. Mature human TGF-beta 3 shows 100%, 99%, and 98% aa identity with mouse/dog/horse, rat, and pig TGF-beta 3, respectively. TGF-beta 3 is secreted as a latent complex. This latent form of TGF-beta 3 is activated by integrins, thrombospondin-1, plasmin, and matrix metalloproteases. It can also be activated by extreme pH and reactive oxygen species. TGF-beta 3 binds with high affinity to TGF-beta RII, a type II serine/threonine kinase receptor. This receptor then phosphorylates and activates type I serine/threonine kinase receptors, TGF-beta RI or ALK-1, to modulate transcription through Smad phosphorylation. The divergent biological effects exerted by individual TGF-beta isoforms is dependent upon the recruitment of co-receptors (TGF-beta RIII and endoglin) and the subsequent initiation of Smad-dependent or-independent signaling pathways.