

## Recombinant Human TGF beta 3 protein(His Tag)

**Catalog Number:** PKSH034198

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

### Description

<b>Species</b>	Human
<b>Source</b>	E.coli-derived Human TGF beta 3 protein Ala 301-Ser 412, with an C-terminal His
<b>Calculated MW</b>	13.7 kDa
<b>Observed MW</b>	13 kDa
<b>Accession</b>	P10600
<b>Bio-activity</b>	Measure by its ability to inhibit IL-4-induce proliferation in HT-2 cells. The ED <sub>50</sub> for this effect is <50 pg/mL. The specific activity of recombinant human TGF beta 3 is > 2 x 10 <sup>7</sup> IU/mg.

### Properties

<b>Purity</b>	> 98 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 0.1 EU per µg 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 sterile 20 mM sodium citrate, 0.2 M NaCl, pH 3.5. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

### Background

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. Rat TGF-beta 3 cDNA encodes a 412 amino acid (aa) precursor that contains a 23 aa signal peptide and a 389 aa proprotein. 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.

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