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# Recombinant Human TGF-beta 3/TGFB3 protein (His tag)



Catalog Number:PDEH100271

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

## Description

<b>Synonyms</b>	ARVD;ARVD1;LDS5;RNHF;TGFbeta 3;transforming growth factor beta-3
<b>Species</b>	Human
<b>Expression Host</b>	E.coli
<b>Sequence</b>	Ala 301-Ser 412
<b>Accession</b>	P10600
<b>Calculated Molecular Weight</b>	12.2 kDa
<b>Observed molecular weight</b>	30 kDa
<b>Tag</b>	N-His

## Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	Please contact us for more information.
<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 PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01 % Tween80 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. 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.

## For Research Use Only

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