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

Catalog Number: PDER100217

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

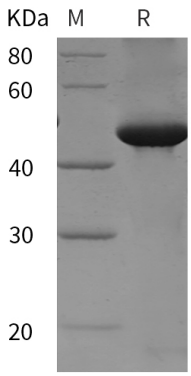
Description

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

Properties

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



> 95 % as determined by reducing SDS-PAGE.

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 .