

Latent TGF beta 2 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	Tgfb-2;Tgf-beta2;TGF-beta 2;Tgf-β2;TGFB2;TGF β2;BB105277;transforming growth factor β2; transforming growth factor beta 2
Protein Construction:	A DNA sequence encoding the mouse Tgfb2 (NP_033393.2) (Met1-Ser414) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 20
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P27090
Molecular Weight:	46.9 kDa (predicted)

QC Testing

Biological Activity:	The whole mouse TGF beta 2 protein showed no activity.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

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 beta 2 (Transforming growth factor beta 2), an extracellular glycosylated protein, which belongs to the TGF-beta family. TGF-beta regulates key mechanisms of tumor development, namely immunosuppression, metastasis, angiogenesis, and proliferation. TGF beta 2 suppression is a promising therapeutic approach for malignant tumor therapy. The signaling pathway of TGF beta 2/Smad plays an important role in the pathological process in posterior capsule opacification (PCO) after cataract surgery. Silencing Smad2 and Smad3 efficiently blocked the

effect of TGF beta 2 on cell proliferation, migration, and extracellular matrix production. TGF beta 2 activation of MEKK3/ERK1/2/5 signaling modulates Has2 expression and hyaluronan (HA) production leading to the induction of epithelial to mesenchymal transformation (EMT) events. Besides, the upregulation of the TGF beta 2 level is a common pathological feature of Alzheimer's disease (AD) brains and suggests that it may be closely linked to the development of neuronal death related to AD.

Reference

- Schlingensiepen KH, et al. (2006) Targeted tumor therapy with the TGF-beta 2 antisense compound AP 12009. *Cytokine Growth Factor Rev.* 17(1-2): 129-39.
- Ghatpande SK, et al. (2010) Transforming growth factor beta2 is negatively regulated by endogenous retinoic acid during early heart morphogenesis. *Dev Growth Differ.* 52(5): 433-55.
- Noguchi A, et al. (2010) Transforming growth factor beta2 level is elevated in neurons of Alzheimer's disease brains. *Int J Neurosci.* 120(3): 168-75.
- Li J, et al. (2011) Comparative effects of TGF- β 2/Smad2 and TGF- β 2/Smad3 signaling pathways on proliferation, migration, and extracellular matrix production in a human lens cell line. *Exp Eye Res.* 92(3): 173-9.

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