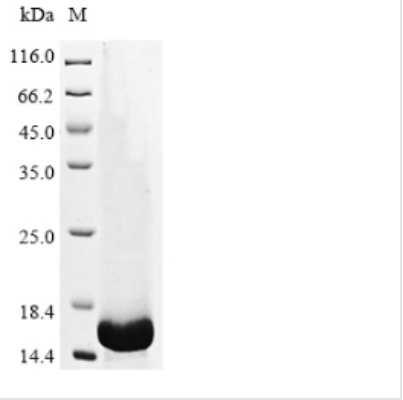
Recombinant Mouse Transforming growth factor beta-1 (Tgfb1), partial

Product Code	CSB-EP023446MO
Abbreviation	Recombinant Mouse Tgfb1 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P04202
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	ALDTNYCFSSTEKNCCVRQLYIDFRKDLGWKWIHEPKGYHANFCLGPCPYIWSLDTQYSKVLALYNQHNPGASASPCCVPQALEPLPIVYYVGRKPKVEQLSNMIVRSCKCS
Research Area	Signal Transduction
Source	E.coli
Target Names	Tgfb1
Expression Region	279-390aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	16.9 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The synthesis of recombinant mouse Tgfb1 protein begins with cloning the Tgfb1 gene fragment (279-390aa) with the N-terminal 6xHis-tag gene into an appropriate expression vector. This vector is then introduced into E.coli cells to promote protein expression. After expression, the protein undergoes a series of purification steps, typically using affinity chromatography. Post-purification, SDS-PAGE is used to evaluate the purity of the protein, exceeding 85%.

Tgfb1 is a pivotal cytokine involved in various biological processes, including cell growth, differentiation, and apoptosis. In mice, Tgfb1 plays a crucial role in several physiological and pathological contexts, particularly regulating immune responses, tissue repair, and fibrosis. Its multifaceted functions are mediated through complex signaling pathways that influence cellular behavior in various tissues, including the liver, lungs, and cartilage.

Tgfb1 is recognized for its significant role in fibrogenesis, particularly in liver diseases such as non-alcoholic steatohepatitis (NASH) and liver cirrhosis. It activates hepatic stellate cells, which are responsible for extracellular matrix deposition, thereby contributing to fibrosis progression [1][2][3]. In models of liver injury, Tgfb1 signaling is often over-activated, leading to increased hepatocyte apoptosis and inflammation [4][5]. This cytokine's involvement in liver pathology underscores its importance as a therapeutic target for conditions characterized by excessive fibrosis and inflammation [2][5].

In the context of lung diseases, Tgfb1 is implicated in the development of pulmonary fibrosis by promoting the activation and differentiation of fibroblasts into myofibroblasts, which are key effector cells in fibrotic processes [6][7]. The signaling pathways activated by Tgfb1 can lead to the production of extracellular matrix components, further exacerbating lung tissue remodeling and dysfunction [6][7]. This role in fibrosis is not limited to the liver and lungs. Tgfb1 also influences cartilage metabolism, where it can modulate chondrocyte behavior, impacting conditions such as osteoarthritis [8][9][10].

References:

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Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.