abcam

Product datasheet

Recombinant human TGF beta 1 protein (Active) ab50036

44 References 1 Image

Description

Product name	Recombinant human TGF beta 1 protein (Active)
Biological activity	The ED_{50}, as determined by TGF-beta1's ability to inhibit the mouse IL-4-dependent proliferation of mouse HT-2 cells, is ≤ 0.05 ng/ml), corresponding to a specific activity of ≥ 2 x 10^7 units/mg.
Purity	> 98 % SDS-PAGE. > 98% by HPLC analyses. Endotoxin Level: < 0.1 ng/µg of protein (< 1 EU/µg).
Endotoxin level	< 1.000 Eu/µg
Expression system	HEK 293 cells
Accession	P01137
Protein length	Protein fragment
Animal free	No
Nature	Recombinant
Species	Human
Sequence	ALDTNYCFSS TEKNCCVRQL YIDFRKDLGW KWIHEPKGYH ANFCLGPCPY IWSLDTQYSK VLALYNQHNP GASAAPCCVP QALEPLPIVY YVGRKPKVEQ LSNMIVRSCK CS
Predicted molecular weight	25 kDa
Amino acids	279 to 390
Additional sequence information	TGF-beta1 is a 25.0 kDa protein with each subunit containing 112 aa, linked by a single disulfide bond. It is the mature protein after cleavage of the signal peptide and latency-associated peptide.

Specifications

Our **Abpromise guarantee** covers the use of **ab50036** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	HPLC Cell Culture SDS-PAGE Functional Studies

	Western blot
Form	Lyophilized
Additional notes	TGF-beta is secreted predominantly as latent complexes which are stored at the cell surface and in the extracellular matrix. The release of biologically active TGF-β isoform from a latent complex involves proteolytic processing of the complex and /or induction of conformational changes by proteins such as thrombospondin-1. TGF-β1 is the most abundant isoform secreted by almost every cell type.

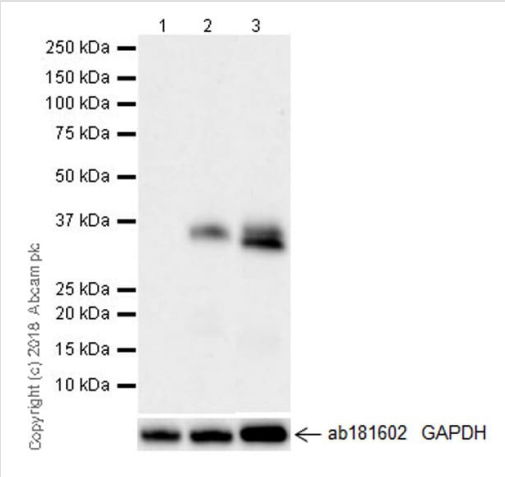
Preparation and Storage

Stability and Storage	Shipped at 4°C. Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. This product is an active protein and may elicit a biological response in vivo, handle with caution.
Reconstitution	Centrifuge the vial prior to opening. Reconstitute in 10mM Citric Acid, pH3.0 to a concentration of 50 µg/ml (e.g. 5 µg/100µl). This solution can then be stored at 4oC to 8oC for up to 1 week or prepared for extended storage. It is recommended that further dilutions be made in PBS with 0.1% BSA and stored at -20oC for future use.

General Info

Function	Multifunctional protein that controls proliferation, differentiation and other functions in many cell types. Many cells synthesize TGFB1 and have specific receptors for it. It positively and negatively regulates many other growth factors. It plays an important role in bone remodeling as it is a potent stimulator of osteoblastic bone formation, causing chemotaxis, proliferation and differentiation in committed osteoblasts.
Tissue specificity	Highly expressed in bone. Abundantly expressed in articular cartilage and chondrocytes and is increased in osteoarthritis (OA). Co-localizes with ASPN in chondrocytes within OA lesions of articular cartilage.
Involvement in disease	Defects in TGFB1 are the cause of Camurati-Engelmann disease (CE) [MIM:131300]; also known as progressive diaphyseal dysplasia 1 (DPD1). CE is an autosomal dominant disorder characterized by hyperostosis and sclerosis of the diaphyses of long bones. The disease typically presents in early childhood with pain, muscular weakness and waddling gait, and in some cases other features such as exophthalmos, facial paralysis, hearing difficulties and loss of vision.
Sequence similarities	Belongs to the TGF-beta family.
Post-translational modifications	Glycosylated. The precursor is cleaved into mature TGF-beta-1 and LAP, which remains non-covalently linked to mature TGF-beta-1 rendering it inactive.
Cellular localization	Secreted > extracellular space > extracellular matrix.

Images



Western blot - Recombinant human TGF beta 1 protein (Full length) (ab50036)

All lanes : Anti-CTGF antibody [EPR20728] (**ab209780**) at 1/1000 dilution

Lane 1 : NIH/3T3 (mouse embryonic fibroblast) starved for 18 hours, whole cell lysate
Lane 2 : NIH/3T3 starved for 18 hours, then treated with 10 ng/ml transforming growth factor-ß (TGF-ß1, ab50036) and 50 µg/ml Heparin sodium salt for 24 hours, whole cell lysate
Lane 3 : HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

Blocking/Dilution buffer and concentration: 5% NFDM/TBST.

The level of CTGF expression can be induced by TGF beta treatment (PMID: 17786299).

CTGF is constitutively expressed in HepG2 cells (PMID:15886528).

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