TGF β1/3 (PT0402R) PT® Rabbit mAb

CatalogNo: YM8247 Recombinant

Key Features

Host Species
- Rabbit

Reactivity
- Human,Mouse,Rat,

Applications
- WB,IHC,IF,IP,ELISA

MW
- 44kD (Calculated)

44kD,13kD (Observed)

Isotype
- IgG,Kappa

Recommended Dilution Ratios

IHC 1:1000-1:4000
WB 1:500-1:2000
IF 1:200-1:1000
ELISA 1:5000-1:20000
IP 1:50-1:200

Storage

Storage*	-15°C to -25°C/1 year(Do not lower than -25°C)
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA

Basic Information

Clonality	Monoclonal
Clone Number	PT0402R

Immunogen Information

Specificity	Endogenous

Target Information

Gene name TGFB1 TGFB3

Protein Name Transforming growth factor beta-1 proprotein;Latency-associated peptide(LAP);Transforming growth factor beta-1(TGF-beta-1);Transforming growth factor beta-3 proprotein;Transforming growth factor beta-3 (TGF-beta-3);

Organism	Gene ID	UniProt ID
Human	7040; 7043;	P01137; P10600;
Mouse	21803;	P04202; P17125;
Rat	59086; 25717;	P17246; Q07258;

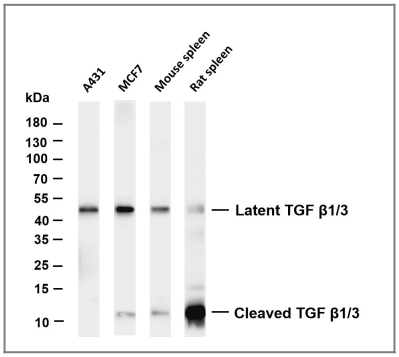
Cellular Localization Secreted

Tissue specificity TGF β1:Highly expressed in bone (PubMed:11746498, PubMed:17827158). Abundantly expressed in articular cartilage and chondrocytes and is increased in osteoarthritis (OA) (PubMed:11746498, PubMed:17827158). Colocalizes with ASPN in chondrocytes within OA lesions of articular cartilage (PubMed:17827158).

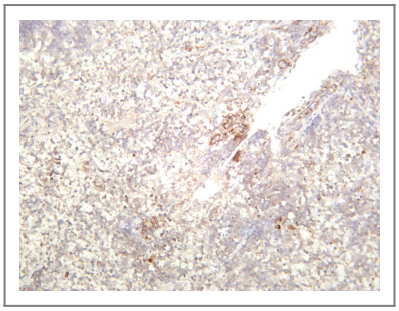
Function

TGF-beta-1 proprotein: Precursor of the Latency-associated peptide (LAP) and TGF-beta-1 chains, which constitute the regulatory and active subunit of TGF-beta-1, respectively.; [Latency-associated peptide]: Required to maintain the TGF-beta-1 chain in a latent state during storage in extracellular matrix . Associates non-covalently with TGF-beta-1 and regulates its activation via interaction with 'milieu molecules', such as LTBP1, LRRC32/GARP and LRRC33/NRROS, that control activation of TGF-beta-1 . Interaction with LRRC33/NRROS regulates activation of TGF-beta-1 in macrophages and microglia (Probable). Interaction with LRRC32/GARP controls activation of TGF-beta-1 on the surface of activated regulatory T-cells (Tregs) . Interaction with integrins (ITGAV:ITGB6 or ITGAV:ITGB8) results in distortion of the Latency-associated peptide chain and subsequent release of the active TGF-beta-1;[TGF-beta-1]: Multifunctional protein that regulates the growth and differentiation of various cell types and is involved in various processes, such as normal development, immune function, microglia function and responses to neurodegeneration (By similarity). Activation into mature form follows different steps: following cleavage of the proprotein in the Golgi apparatus, Latency-associated peptide (LAP) and TGF-beta-1 chains remain non-covalently linked rendering TGF-beta-1 inactive during storage in extracellular matrix . At the same time, LAP chain interacts with 'milieu molecules', such as LTBP1, LRRC32/GARP and LRRC33/NRROS that control activation of TGF-beta-1 and maintain it in a latent state during storage in extracellular milieus . TGF-beta-1 is released from LAP by integrins (ITGAV:ITGB6 or ITGAV:ITGB8): integrin-binding to LAP stabilizes an alternative conformation of the LAP bowtie tail and results in distortion of the LAP chain and subsequent release of the active TGF-beta-1 . Once activated following release of LAP, TGF-beta-1 acts by binding to TGF-beta receptors (TGFBR1 and TGFBR2), which transduce signal . While expressed by many cells types, TGF-beta-1 only has a very localized range of action within cell environment thanks to fine regulation of its activation by Latency-associated peptide chain (LAP) and 'milieu molecules' (By similarity). Plays an important role in bone remodeling: acts as a potent stimulator of osteoblastic bone formation, causing chemotaxis, proliferation and differentiation in committed osteoblasts (By similarity). Can promote either T-helper 17 cells (Th17) or regulatory T-cells (Treg) lineage differentiation in a concentration-dependent manner (By similarity). At high concentrations, leads to FOXP3-mediated suppression of RORC and down-regulation of IL-17 expression, favoring Treg cell development (By similarity). At low concentrations in concert with IL-6 and IL-21, leads to expression of the IL-17 and IL-23 receptors, favoring differentiation to Th17 cells (By similarity). Stimulates sustained production of collagen through the activation of CREB3L1 by regulated intramembrane proteolysis (RIP) . Mediates SMAD2/3 activation by inducing its phosphorylation and subsequent translocation to the nucleus . Positively regulates odontoblastic differentiation in dental papilla cells, via promotion of IPO7-mediated translocation of phosphorylated SMAD2 to the nucleus and subsequent transcription of target genes (By similarity). Can induce epithelial-to-mesenchymal transition (EMT) and cell migration in various cell types .Transforming growth factor beta-3 proprotein: Precursor of the Latency-associated peptide (LAP) andTGF-beta-3 chains, which constitute the regulatory and active subunit of TGF-beta-3, respectively.; [Latency-associated peptide]: Required to maintain theTGF-beta-3 chain in a latent state during storage in extracellular matrix (By similarity). Associates non-covalently with TGF-beta-3 and regulates its activation via interaction with 'milieu molecules', such as LTBP1 and LRRC32/GARP, that control activation of TGF-beta-3 (By similarity). Interaction with integrins results in distortion of the Latency-associated peptide chain and subsequent release of the active TGF-beta-3 (By similarity).; Transforming growth factor beta-3: Multifunctional protein that regulates embryogenesis and cell differentiation and is required in various processes such as secondary palate development (By similarity). Activation into mature form follows different steps: following cleavage of the proprotein in the Golgi apparatus, Latency-associated peptide (LAP) andTGF-beta-3 chains remain non-covalently linked rendering TGF-beta-3 inactive during storage in extracellular matrix (By similarity). At the same time, LAP chain interacts with 'milieu molecules', such as LTBP1 and LRRC32/GARP that control activation of TGF-beta-3 and maintain it in a latent state during storage in extracellular milieus (By similarity). TGF-beta-3 is released from LAP by integrins: integrin-binding results in distortion of the LAP chain and subsequent release of the active TGF-beta-3 (By similarity). Once activated following release of LAP, TGF-beta-3 acts by binding to TGF-beta receptors (TGFBR1 and TGFBR2), which transduce signal (By similarity).

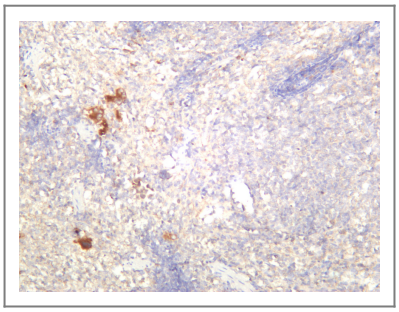
Validation Data



Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-TGF β1/3 antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: A431 Lane 2: MCF7 Lane 3: Mouse spleen Lane 4: Rat spleen Predicted band size: 44kDa Observed band size: 44,13kDa



Mouse spleen was stained with anti-TGF β1/3 rabbit antibody



Rat spleen was stained with anti-TGF β1/3 rabbit antibody

Contact information

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Please scan the QR code to access additional product information:
TGF β1/3 (PT0402R) PT® Rabbit mAb