Mouse TGF beta1 Monoclonal Antibody | anti-MBP antibody

TGF beta1 Mouse monoclonal Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA330035	**Mouse**	**Human, Mouse, Rat**	**Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot**

PRODUCT SYNONYMS

TGF beta1; Monoclonal Antibody; TGF beta1 Mouse monoclonal Antibody; Cartilage-inducing factor; CED; Differentiation inhibiting factor; DPD1; LAP; Latency-associated peptide; Prepro transforming growth factor beta 1; TGF beta 1; TGF beta; TGF beta 1 protein; TGF-beta 1 protein; TGF-beta-1; TGF-beta-5; TGF-beta1; TGFB; Tgfb-1; tgfb1; TGFB1_HUMAN; TGFbeta; TGFbeta1; Transforming Growth Factor b1; Transforming Growth Factor beta 1; Transforming growth factor beta 1a; transforming growth factor beta-1; transforming growth factor; beta 1; Transforming Growth Factor-beta1; anti-MBP antibody

PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Human, Mouse, Rat
Clonality	Monoclonal
Isotype	Mouse IgG
Clone Number	AFB19414
Specificity	TGF beta1 antibody detects endogenous levels of total TGF beta1.
Purity/Purification	Affinity-chromatography.
Form/Format	Liquid. Mouse IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-MBP antibody	ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human TGF beta1.
Conjugation	Unconjugated
Similarity	The 'straitjacket' and 'arm' domains encircle the Transforming growth factor beta-1 (TGF-beta-1) monomers and are fastened together by strong bonding between Lys-56 and Tyr-103/Tyr-104. The cell attachment site motif mediates binding to integrins (ITGAV:ITGB6 or ITGAV:ITGB8) (PubMed:28117447). The motif locates to a long loop in the arm domain called the bowtie tail (PubMed:28117447). Integrin-binding stabilizes an alternative conformation of the bowtie tail (PubMed:28117447). Activation by integrin requires force application by the actin cytoskeleton, which is resisted by the 'milieu molecules' (such as LTBP1, LRRC32/GARP and/or LRRC33/NRROS), resulting in distortion of the prodomain and release of the active TGF-beta-1 (PubMed:28117447). Belongs to the TGF-beta family.
Post Translational Modifications	Transforming growth factor beta-1 proprotein: The precursor proprotein is cleaved in the Golgi apparatus by FURIN to form Transforming growth factor beta-1 (TGF-beta-1) and Latency-associated peptide (LAP) chains, which remain non-covalently linked, rendering TGF-beta-1 inactive.N-glycosylated. Deglycosylation leads to activation of Transforming growth factor beta-1 (TGF-beta-1); mechanisms triggering deglycosylation-driven activation of TGF-beta-1 are however unclear.

Subunit Structure	Homodimer; disulfide-linked. Interacts with the serine proteases, HTRA1 and HTRA3: the interaction with either inhibits TGFB1-mediated signaling. The HTRA protease activity is required for this inhibition (By similarity). May interact with THSD4; this interaction may lead to sequestration by FBN1 microfibril assembly and attenuation of TGFB signaling (By similarity). Interacts with CD109, DPT and ASPN. Latency-associated peptide: Homodimer; disulfide-linked. Latency-associated peptide: Interacts with Transforming growth factor beta-1 (TGF-beta-1) chain; interaction is non-covalent and maintains (TGF-beta-1) in a latent state; each Latency-associated peptide (LAP) monomer interacts with TGF-beta-1 in the other monomer. Latency-associated peptide: Interacts with LTBP1; leading to regulate activation of TGF-beta-1. Latency-associated peptide: Interacts with LRRC32/GARP; leading to regulate activation of TGF-beta-1 on the surface of activated regulatory T-cells (Tregs). Interacts with LRRC33/NRROS; leading to regulate activation of TGF-beta-1 in macrophages and microglia (Probable). Latency-associated peptide: Interacts (via cell attachment site) with integrins ITGAV and ITGB6 (ITGAV:ITGB6), leading to release of the active TGF-beta-1. Latency-associated peptide: Interacts with NREP; the interaction results in a decrease in TGFB1 autoinduction (By similarity). Latency-associated peptide: Interacts with HSP90AB1; inhibits latent TGFB1 activation. Transforming growth factor beta-1: Homodimer; disulfide-linked. Transforming growth factor beta-1: Interacts with TGF-beta receptors (TGFBR1 and TGFBR2), leading to signal transduction.
Tissue Specificity	Highly expressed in bone. Abundantly expressed in articular cartilage and chondrocytes and is increased in osteoarthritis (OA). Colocalizes with ASPN in chondrocytes within OA lesions of articular cartilage.
Function	Transforming growth factor beta-1 proprotein: Precursor of the Latency-associated peptide (LAP) and Transforming growth factor beta-1 (TGF-beta-1) chains, which constitute the regulatory and active subunit of TGF-beta-1, respectively.Required to maintain the Transforming growth factor beta-1 (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.Transforming growth factor 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 Transforming growth factor beta-1 (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. Can induce epithelial-to-mesenchymal transition (EMT) and cell migration in various cell types.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



WB (Western Blot)
Western blot analysis of extracts from various samples, using TGF beta1 Mouse mAb.Lane 1: Hela cells, blocked with antigen-specific peptides,Lane 2: Hela cells,Lane 3: Mouse kidney,Lane 4: Rat brain.



IHC (Immunohiostchemistry)
At 1/100 staining Mouse lung tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Mouse antibody was used as the secondary antibody.



IF (Immunofluorescence)
Staining Hela cells by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. Samples were then incubated with primary Ab(BF8012) and rabbit anti-beta tubulin Ab(AF7011) for 1 hour at 37 degree C. An AlexaFluor594 conjugated goat anti-mouse IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-rabbit IgG(H+L) Ab(Green) were used as the secondary antibody.The nuclear counter stain is DAPI (blue).

ADDITIONAL INFORMATION

Product Categories/Family for anti-MBP antibody	Secreted; Extracellular space; Extracellular matrix; Secreted; Primary

NCBI AND UNIPROT INFORMATION

NCBI GI #	63025222
NCBI GeneID	7040
NCBI Accession #	NP_000651.3
NCBI GenBank Nucleotide #	NM_000660.4
UniProt Accession #	P01137; Q9UCG4; A8K792
Molecular Weight	44,341 Da
NCBI Official Full Name	transforming growth factor beta-1
NCBI Official Synonym Full Names	transforming growth factor, beta 1
NCBI Official Symbol	TGFB1
NCBI Official Synonym Symbols	CED; LAP; DPD1; TGFB; TGFbeta
NCBI Protein Information	transforming growth factor beta-1; TGF-beta-1; TGF-beta 1 protein; latency-associated peptide
UniProt Protein Name	Transforming growth factor beta-1
UniProt Gene Name	**TGFB1**
UniProt Synonym Gene Names	TGFB; TGF-beta-1; LAP
UniProt Entry Name	TGFB1_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: https://stage.aaabiotech.com/monoclonal/tgf-beta1-antibody-clone-afb19414-immunocytochemistry-immunofluorescence-immunohistochemistry-western-blot-