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Datasheet for 600-401-MG6S

TGF beta Receptor 1 Antibody

Overview

Description:	Anti-TGF beta Receptor 1 (RABBIT) Antibody - 600-401-MG6S
Item No.:	600-401-MG6S
Size:	25 µL
Applications:	ELISA, FC, IHC, WB
Reactivity:	Human, Mouse
Host Species:	Rabbit

Product Details

Background:

The transforming growth factor-beta family of polypeptides (TGF-beta1-3) are involved in the regulation of cellular processes, including division, differentiation, motility, adhesion and death. TGF-beta signals by binding the type II receptor (TGF-betaRII) which activates the type I receptor (TGF-betaRI). Transmembrane serine/threonine kinase forming with the TGF-beta type II serine/threonine kinase receptor, TGFBR2, the non-promiscuous receptor for the TGF-beta cytokines TGFB1, TGFB2 and TGFB3. Transduces the TGFB1, TGFB2 and TGFB3 signal from the cell surface to the cytoplasm and is thus regulating a plethora of physiological and pathological processes including cell cycle arrest in epithelial and hematopoietic cells, control of mesenchymal cell proliferation and differentiation, wound healing, extracellular matrix production, immunosuppression and carcinogenesis. The formation of the receptor complex composed of 2 TGFBR1 and 2 TGFBR2 molecules symmetrically bound to the cytokine dimer results in the phosphorylation and the activation of TGFBR1 by the constitutively active TGFBR2. Activated TGFBR1 phosphorylates SMAD2 which dissociates from the receptor and interacts with SMAD4. The SMAD2-SMAD4 complex is subsequently translocated to the nucleus where it modulates the transcription of the TGF-beta-regulated genes. This constitutes the canonical SMAD-dependent TGF-beta signaling cascade. Also involved in non-canonical, SMAD-independent TGF-beta signaling pathways. For instance, TGFBR1 induces TRAF6 autoubiquitination which in turn results in MAP3K7 ubiquitination and activation to trigger apoptosis. Also regulates epithelial to mesenchymal transition through a SMAD-independent signaling pathway through PARD6A phosphorylation and activation. Mutations in this gene have been associated with Loeys-Dietz aortic aneurysm syndrome (LDAS). Anti-TGF beta receptor 1 Antibody is useful for researchers interested in skin cancer research, cardiac research, and mTOR Pathway and p38 MAPK Signaling Pathways.

Synonyms:	Rabbit Anti-TGF-Beta Receptor Type-1 Antibody, TGF-Beta Receptor Type I, TGF-Beta Type I Receptor, Transforming Growth Factor Beta Receptor 1,Transforming Growth Factor-Beta Receptor Type I, Serine/Threonine-Protein Kinase Receptor R4, Activin A Receptor Type II-Like Kinase, 53kDa, Activin Receptor-Like Kinase 5, TbetaR-I, TGFR-1, ALK-5, ALK5, SKR4, TBR-I
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	TGFBR1
Reactivity:	Human, Mouse
Immunogen Type:	Conjugated Peptide
Immunogen:	Anti-TGF beta receptor 1 antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an extracellular portion of human TGF beta receptor 1 conjugated to Keyhole Limpet Hemocyanin (KLH).
Purity/Specificity:	This affinity purified antibody is directed against human TGF beta receptor type-1 protein. The product was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with the antigen based on 100% homology with the immunizing sequence to mouse, rat, bovine, and wild boar. Cross-reactivity is expected with TGFb1 from non-mammalian sources as only a single amino acid residue change is found within the immunogen sequence from many other organisms.
Relevant Links:	• UniProtKB - P36897 • NCBI - NP_001124388.1 • GeneID - 7046

Application Details

Tested Applications:	ELISA, FC, IHC, WB
Application Note:	Anti-TGF beta Receptor 1 Antibody has been tested in ELISA, WB, IHC, and FLOW. Expect a band at ~47.7 kDa in western blot using appropriate lysates. Positive control used: TGFB1 overexpressed lysate, HEK, HeLa, or Mouse Liver in WB; Hu pancreas in IHC; MCF7 cells FLOW.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	5 µg/ml
FC:	1:40

IF:	15 µg/ml
IHC:	1:100
WB:	1:1000

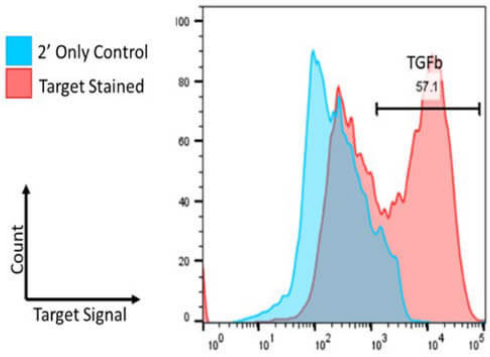
Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

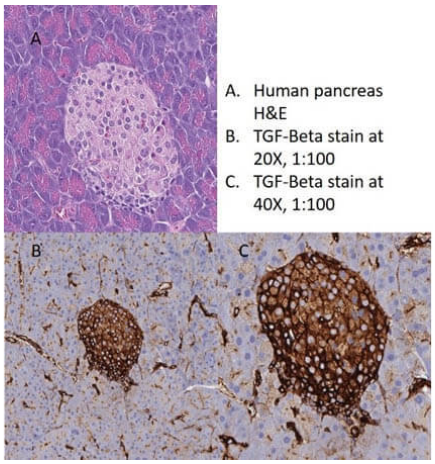
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is one (1) year from date of receipt.

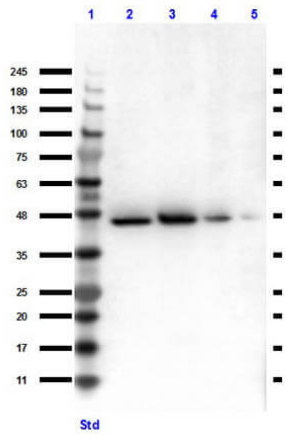
Images



Flow Cytometry
Flow Cytometry of Rabbit Anti-TGF beta Receptor 1 Antibody. Cells: MCF7 cells. Primary antibody: Anti-TGF beta 1 receptor at 5uL in 100uL FACS buffer (5% FBS/PBS 0.1% NaN3) incubate for 30 min at room temperature. Fixation and Permeabilization: 4%PFA and MeOH. Secondary antibody: Donkey anti-Rabbit DyLight488 (p/n: 611-741-127) at 1:400 for 30 min at RT.



Immunohistochemistry
Immunohistochemistry of Rabbit Anti-TGF beta Receptor 1 Antibody. Tissue: human pancreas. Antigen retrieval: HIER using Citrate Buffer for 20min. Primary Antibody: TGF beta receptor 1 at 1:100 for 30min at room temperature. Secondary Antibody: Anti-Rabbit Poly-HRP-IgG Ready-to-use for 8 min at room temperature. Staining: DAB. Counterstain: Hematoxylin.



Western Blot
Western Blot of Rabbit Anti-TGF beta Receptor 1 Antibody. Lane 1: Opal Prestained Molecular Weight (p/n MB-210-0500). Lane 2: TGF beta Receptor 1/ALK-5/HEK-293 overexpressing lysate. Lane 3: HEK293T Lysate (p/n W09-001-GX5). Lane 4: HeLa Lysate (p/n W09-000-364). Lane 5: Mouse Liver Lysate (p/n W10-000-T020). Primary Antibody: Anti-TGF beta Receptor 1 at 1:1000 overnight at 4°C. Secondary Antibody: Goat Anti-RABBIT IgG HRP Antibody (p/n 611-103-122) at 1:70,000 for 1hr RT. Block: BlockOut Buffer (p/n MB-073). Expect: ~47kDa.

Disclaimer

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