

## ARG66510 anti-TGF beta Receptor 1 antibody

Package: 100 µl  
Store at: -20°C

### Summary

Product Description	Mouse Monoclonal antibody recognizes TGF beta Receptor 1
Tested Reactivity	Hu
Tested Application	IHC-P
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2a, kappa
Target Name	TGF beta Receptor 1
Species	Human
Immunogen	Synthetic peptide derived from Human TGF beta Receptor 1.
Conjugation	Un-conjugated
Alternate Names	ESS1; TGF-beta receptor type-1; ALK5; LDS2A; AAT5; Activin receptor-like kinase 5; LDS1; tbetaR-I; Activin A receptor type II-like protein kinase of 53kD; MSSE; ALK-5; ACVRLK4; TGFR-1; TGF-beta receptor type I; TbetaR-I; LDS1A; Serine/threonine-protein kinase receptor R4; EC 2.7.11.30; Transforming growth factor-beta receptor type I; SKR4; TGF-beta type I receptor

### Application Instructions

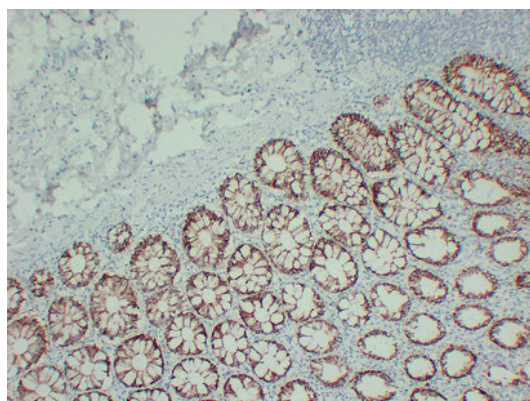
Application table	Application	Dilution
	IHC-P	1:100 - 1:500
Application Note	IHC-P: Antigen Retrieval: Citric acid buffer (pH 6.0) was used. * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

### Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	PBS, 0.02% Sodium azide, 50% Glycerol and 0.5% BSA.
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol and 0.5% BSA
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Gene Symbol	TGFBR1
Gene Full Name	transforming growth factor, beta receptor 1
Background	The protein encoded by this gene forms a heteromeric complex with type II TGF-beta receptors when bound to TGF-beta, transducing the TGF-beta signal from the cell surface to the cytoplasm. The encoded protein is a serine/threonine protein kinase. Mutations in this gene have been associated with Loeys-Dietz aortic aneurysm syndrome (LDAS). Multiple transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Aug 2008]
Function	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. [UniProt]
Calculated Mw	56 kDa
PTM	Phosphorylated at basal levels in the absence of ligand. Activated upon phosphorylation by TGFBR2, mainly in the GS domain. Phosphorylation in the GS domain abrogates FKBP1A-binding.  N-Glycosylated.  Ubiquitinated; undergoes ubiquitination catalyzed by several E3 ubiquitin ligases including SMURF1, SMURF2 and NEDD4L2. Results in the proteasomal and/or lysosomal degradation of the receptor thereby negatively regulating its activity. Deubiquitinated by USP15, leading to stabilization of the protein and enhanced TGF-beta signal. Its ubiquitination and proteasome-mediated degradation is negatively regulated by SDCBP (PubMed:25893292). [UniProt]
Cellular Localization	Cell membrane; Single-pass type I membrane protein. Cell junction, tight junction. Cell surface. Membrane raft. [UniProt]

## Images



ARG66510 anti-TGF beta Receptor 1 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human colon stained with ARG66510 anti-TGF beta Receptor 1 antibody at 1:200 (4°C, overnight). Antigen Retrieval: Citric acid buffer (pH 6.0) was used.