SunLong Biotech Co.,LTD
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[Primary Antibody]

Rabbit Anti-Smad1 antibody

Catalog Number: SL1619R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Smad1
Immunogen:	KLH conjugated synthetic peptide derived from human Smad 1: 361-465/465
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 Flow-Cyt=1ug/test （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human(predicted:Mouse,Rat,Dog,Pig,Cow,Horse,Rabbit)
Predicted MW.:	52kDa
Subcellular Location:	The nucleus cytoplasmic
Background:	The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the Drosophila gene 'mothers against decapentaplegic' (Mad) and the C. elegans gene Sma. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. This protein mediates the signals of the bone morphogenetic proteins (BMPs), which are involved in a range of biological activities including cell growth, apoptosis, morphogenesis, development and immune responses. In response to BMP ligands, this protein can be phosphorylated and activated by the BMP receptor kinase. The phosphorylated form of this protein forms a complex with SMAD4, which is important for its function in the transcription regulation. This protein is a target for SMAD-specific E3 ubiquitin ligases,

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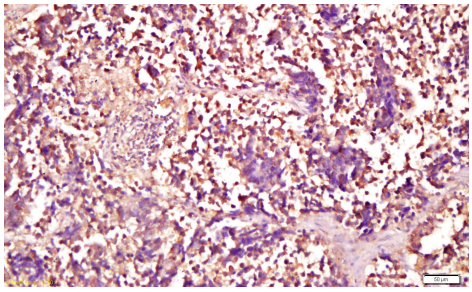
	such as SMURF1 and SMURF2, and undergoes ubiquitination and proteasome-mediated degradation. Alternatively spliced transcript variants encoding the same protein have been observed. [provided by RefSeq]. **Function:** Transcriptional modulator activated by BMP (bone morphogenetic proteins) type 1 receptor kinase. SMAD1 is a receptor-regulated SMAD (R-SMAD). SMAD1/OAZ1/PSMB4 complex mediates the degradation of the CREBBP/EP300 repressor SNIP1. **Subunit:** Interacts with HGS, NANOG and ZCCHC12 (By similarity). May form trimers with another SMAD1 and the co-SMAD SMAD4. Interacts with PEBP2-alpha subunit, CREB-binding protein (CBP), p300, SMURF1, SMURF2 and HOXC8. Associates with ZNF423 or ZNF521 in response to BMP2 leading to activate transcription of BMP target genes. Interacts with SKOR1. Interacts (via MH2 domain) with LEMD3. Binding to LEMD3 results in at least a partial reduction of receptor-mediated phosphorylation. Forms a ternary complex with PSMB4 and OAZ1 before PSMB4 is incorporated into the 20S proteasome. **Subcellular Location:** Cytoplasm. Nucleus. Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4. Co-localizes with LEMD3 at the nucleus inner membrane. **Tissue Specificity:** Ubiquitous. Highest expression seen in the heart and skeletal muscle. **Post-translational modifications:** Phosphorylated on serine by BMP type 1 receptor kinase. Ubiquitin-mediated proteolysis by SMAD-specific E3 ubiquitin ligase SMURF1. DISEASE: Defects in SMAD1 may be a cause of primary pulmonary hypertension (PPH1) [MIM:178600]. A rare disorder characterized by plexiform lesions of proliferating endothelial cells in pulmonary arterioles. The lesions lead to elevated pulmonary arterial pression, right ventricular failure, and death. The disease can occur from infancy throughout life and it has a mean age at onset of 36 years. Penetrance is reduced. Although familial PPH1 is rare, cases secondary to known etiologies are more common and include those associated with the appetite-suppressant drugs. **Similarity:** Belongs to the dwarfin/SMAD family. Contains 1 MH1 (MAD homology 1) domain. Contains 1 MH2 (MAD homology 2) domain. **Database links:** **Entrez Gene:** 4086 Human **Entrez Gene:** 17125 Mouse

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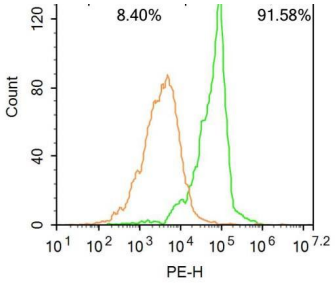
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	Entrez Gene: 25671 Rat Omim: 601595 Human **SwissProt:** Q15797 Human **SwissProt:** P70340 Mouse **SwissProt:** P97588 Rat **Unigene:** 604588 Human **Unigene:** 223717 Mouse **Unigene:** 10635 Rat Smads are an important new gene family recently discovered in the TGF-β signal transduction pathway. They are TGF-β-specific intracellular signal transduction molecules, and SMAD1 belongs to the receptor-activated SMADs. Some scholars believe that Smad1 is mutated in certain tumors and may be a tumor suppressor gene.

[VALIDATION IMAGES]



Tissue/cell: human lung carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer (1M, pH 6.0), Boiling bathing for 15min;
Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;
Incubation: Anti-Smad1 Polyclonal Antibody, Unconjugated(SL1619R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Molt-4 cells were fixed with 4% PFA for 10min at room temperature ,permeabilized with 90% ice-cold methanol for 20 min at -20°C, and incubated in 5% BSA blocking buffer for 30 min at room temperature. Cells were then stained with Smad1 Antibody(SL1619R)at 1:500 dilution in blocking buffer and incubated for 30 min at room temperature, washed twice with 2%BSA in PBS, followed by secondary antibody incubation for 40 min at room temperature. Acquisitions of 20,000 events were performed. Cells stained with primary antibody (green), and isotype control (orange).

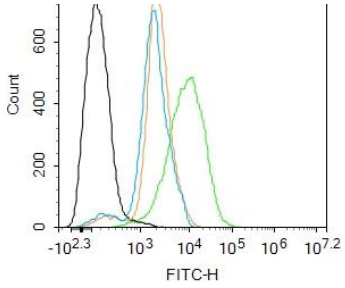
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Blank control:Hela.
Primary Antibody (green line): Rabbit Anti-Smad1 antibody (SL1619R)
Dilution: 1ug/Test;
Secondary Antibody : Goat anti-rabbit IgG-FITC
Dilution: 0.5ug/Test.
Protocol
The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% ice-cold methanol for 20 min at -20℃.The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.

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