

**SMAD1 Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AM8604b**

**Specification**

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**SMAD1 Antibody - Product Information**

Application	IF, WB, IHC-P,E
Primary Accession	<a href="#">Q15797</a>
Reactivity	Human
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Calculated MW	52260

**SMAD1 Antibody - Additional Information**

**Gene ID** 4086

**Other Names**

Mothers against decapentaplegic homolog 1, MAD homolog 1, Mothers against DPP homolog 1, JV4-1, Mad-related protein 1, SMAD family member 1, SMAD 1, Smad1, hSMAD1, Transforming growth factor-beta-signaling protein 1, BSP-1, SMAD1, BSP1, MADH1, MADR1

**Target/Specificity**

This SMAD1 antibody is generated from a mouse immunized with a recombinant protein between 20-330 amino acids from human SMAD1.

**Dilution**

IF~~1:25

WB~~1:2000

IHC-P~~1:25

**Format**

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

SMAD1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**SMAD1 Antibody - Protein Information**

**Name** SMAD1

**Synonyms** BSP1, MADH1, MADR1

**Function** Transcriptional modulator that plays a role in various cellular processes, including embryonic development, cell differentiation, and tissue homeostasis (PubMed:[9335504](#)). Upon BMP ligand binding to their receptors at the cell surface, is phosphorylated by activated type I BMP receptors (BMPRIIs) and associates with SMAD4 to form a heteromeric complex which translocates into the nucleus acting as transcription factor (PubMed:[33667543](#)). In turn, the hetero-trimeric complex recognizes cis-regulatory elements containing Smad Binding Elements (SBEs) to modulate the outcome of the signaling network (PubMed:[33667543](#)). SMAD1/OAZ1/PSMB4 complex mediates the degradation of the CREBBP/EP300 repressor SNIP1. Positively regulates BMP4-induced expression of odontogenic development regulator MSX1 following IPO7-mediated nuclear import (By similarity).

#### Cellular Location

Cytoplasm. Nucleus Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4 (PubMed:[15647271](#)). Co-localizes with LEMD3 at the nucleus inner membrane (PubMed:[15647271](#)). Exported from the nucleus to the cytoplasm when dephosphorylated (By similarity) {ECO:0000250|UniProtKB:P70340, ECO:0000269|PubMed:[15647271](#)}

#### Tissue Location

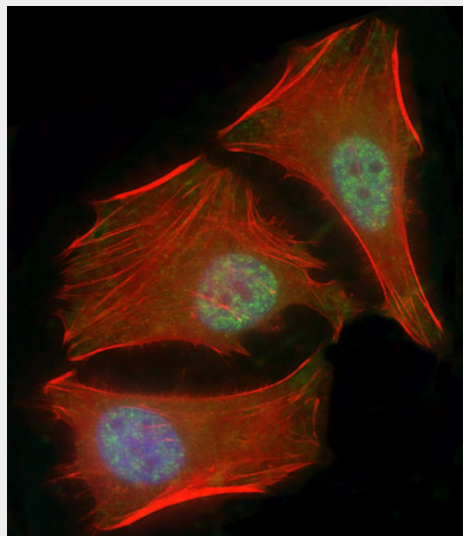
Ubiquitous. Highest expression seen in the heart and skeletal muscle

### SMAD1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

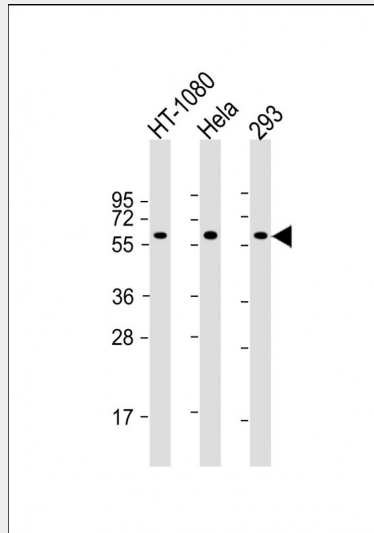
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### SMAD1 Antibody - Images

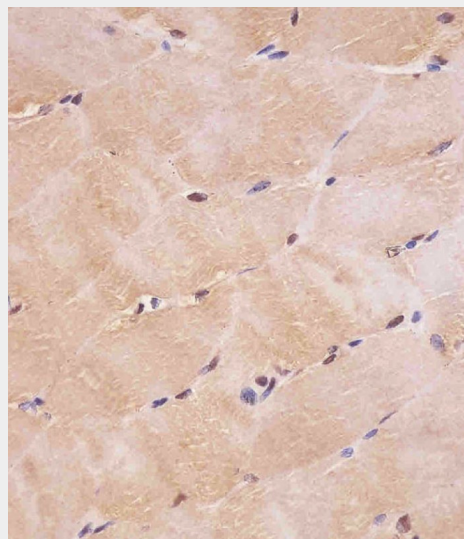


Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized

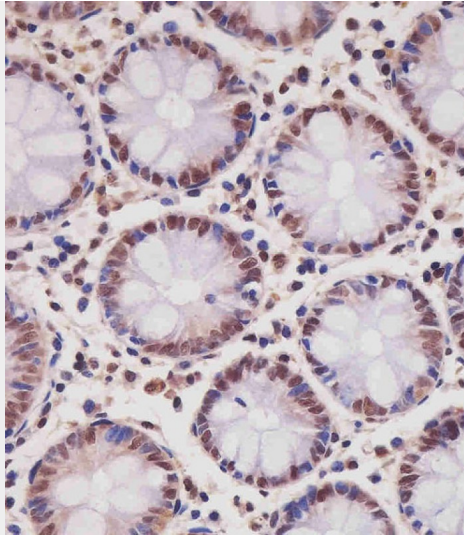
HeLa (human cervical epithelial adenocarcinoma cell line) cells labeling SMAD1 with AM8604b at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-mouse IgG (NH174309) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing nucleus and weak cytoplasm staining on HeLa cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (OI17558410) at 1/100 dilution (red). The nuclear counter stain is DAPI (blue).



All lanes : Anti-SMAD1 Antibody at 1:2000 dilution Lane 1: HT-1080 whole cell lysate Lane 2: HeLa whole cell lysate Lane 3: 293 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 60 kDa Blocking/Dilution buffer: 5% NFD/MTBST.



AM8604b staining SMAD1 in human skeletal muscle tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



AM8604b staining SMAD1 in human colon tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hour at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.

#### **SMAD1 Antibody - Background**

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. May act synergistically with SMAD4 and YY1 in bone morphogenetic protein (BMP)-mediated cardiac-specific gene expression.

#### **SMAD1 Antibody - References**

- Riggins G.J., et al. *Nat. Genet.* 13:347-349(1996).
- Liu F., et al. *Nature* 381:620-623(1996).
- Hoodless P.A., et al. *Cell* 85:489-500(1996).
- Lechleider R.J., et al. *J. Biol. Chem.* 271:17617-17620(1996).
- Zhang Y., et al. *Nature* 383:168-172(1996).