

**SMAD4 Antibody**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO1444a**

**Specification**

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**SMAD4 Antibody - Product Information**

Application	<b>WB, IF, IHC, FC</b>
Primary Accession	<a href="#">O13485</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG1</b>
Calculated MW	<b>65kDa KDa</b>

**Description**

Common mediator of signal transduction by TGF-beta (transforming growth factor) superfamily; SMAD4 is the common SMAD (co-SMAD). Promotes binding of the SMAD2/SMAD4/FAST-1 complex to DNA and provides an activation function required for SMAD1 or SMAD2 to stimulate transcription. May act as a tumor suppressor. Mutations or deletions in this gene have been shown to result in pancreatic cancer, juvenile polyposis syndrome, and hereditary hemorrhagic telangiectasia syndrome.

**Immunogen**

Purified recombinant fragment of human SMAD4 expressed in E. Coli. <br /> <br />

**Formulation**

Ascitic fluid containing 0.03% sodium azide.

**SMAD4 Antibody - Additional Information**

**Gene ID** 4089

**Other Names**

Mothers against decapentaplegic homolog 4, MAD homolog 4, Mothers against DPP homolog 4, Deletion target in pancreatic carcinoma 4, SMAD family member 4, SMAD 4, Smad4, hSMAD4, SMAD4, DPC4, MADH4

**Dilution**

WB~~1/500 - 1/2000  
IF~~1/200 - 1/1000  
IHC~~1/500 - 1/2000  
FC~~1/200 - 1/400

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

SMAD4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## SMAD4 Antibody - Protein Information

**Name** SMAD4

**Synonyms** DPC4, MADH4

### Function

In muscle physiology, plays a central role in the balance between atrophy and hypertrophy. When recruited by MSTN, promotes atrophy response via phosphorylated SMAD2/4. MSTN decrease causes SMAD4 release and subsequent recruitment by the BMP pathway to promote hypertrophy via phosphorylated SMAD1/5/8. Acts synergistically with SMAD1 and YY1 in bone morphogenetic protein (BMP)-mediated cardiac-specific gene expression. Binds to SMAD binding elements (SBEs) (5'-GTCT/AGAC-3') within BMP response element (BMPRE) of cardiac activating regions (By similarity). Common SMAD (co-SMAD) is the coactivator and mediator of signal transduction by TGF-beta (transforming growth factor). Component of the heterotrimeric SMAD2/SMAD3-SMAD4 complex that forms in the nucleus and is required for the TGF-mediated signaling (PubMed:<a href="http://www.uniprot.org/citations/25514493" target="\_blank">25514493</a>). Promotes binding of the SMAD2/SMAD4/FAST-1 complex to DNA and provides an activation function required for SMAD1 or SMAD2 to stimulate transcription. Component of the multimeric SMAD3/SMAD4/JUN/FOS complex which forms at the AP1 promoter site; required for synergistic transcriptional activity in response to TGF-beta. May act as a tumor suppressor. Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator.

### Cellular Location

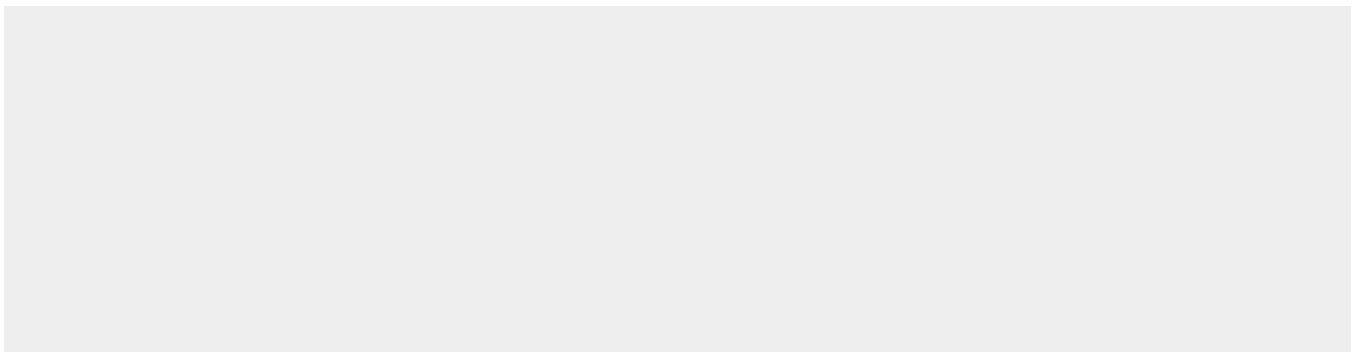
Cytoplasm. Nucleus Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with R-SMAD (PubMed:15799969). PDPK1 prevents its nuclear translocation in response to TGF-beta (PubMed:17327236)

## SMAD4 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](#)

## SMAD4 Antibody - Images



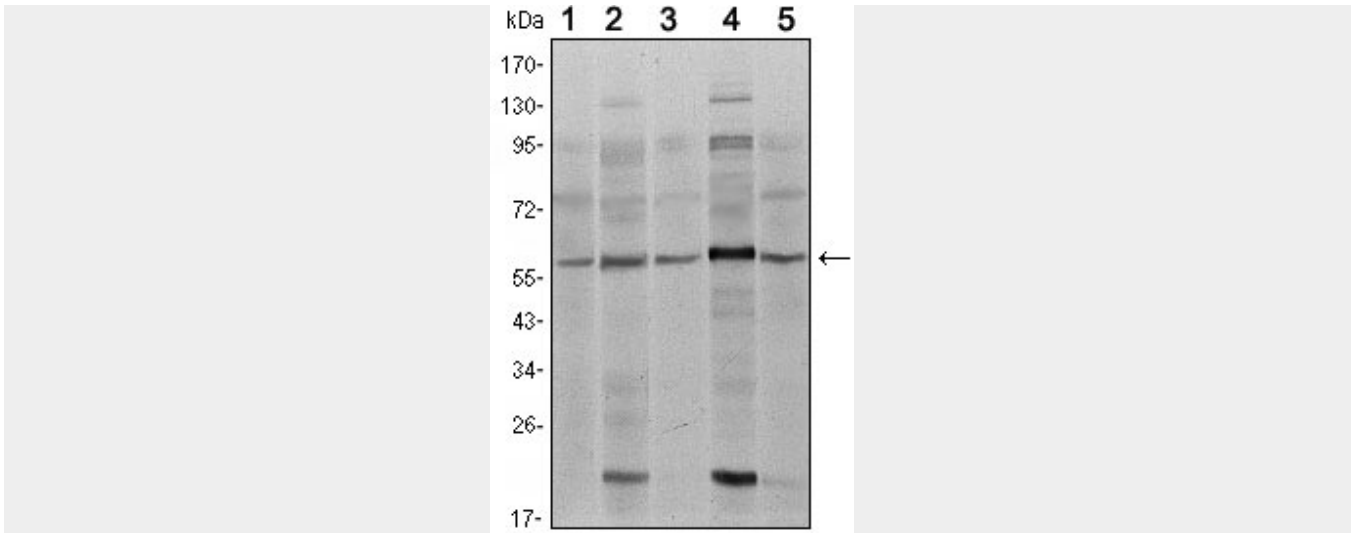


Figure 1: Western blot analysis using SMAD4 mouse mAb against A431 (1), SK-N-SH (2), K562 (3), HepG2 (4) and HUVE12 (5) cell lysate.

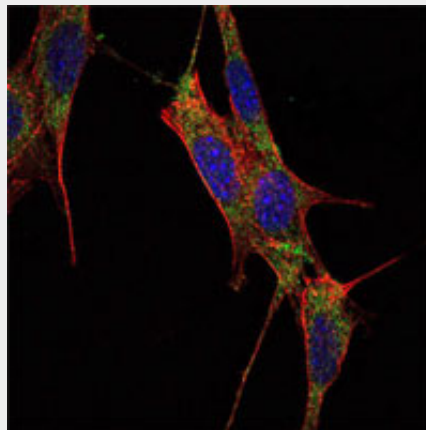


Figure 2: Immunofluorescence analysis of NIH/3T3 cells using SMAD4 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

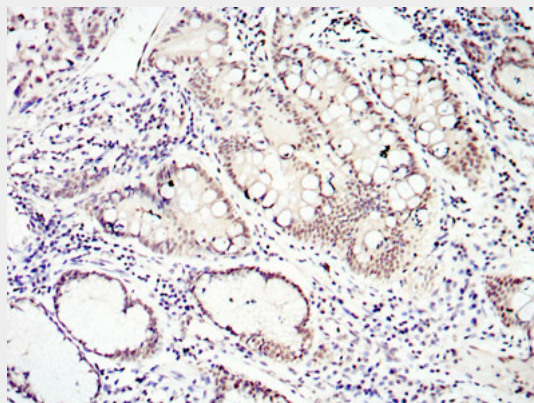


Figure 3: Immunohistochemical analysis of paraffin-embedded lung cancer tissues using SMAD4 mouse mAb with DAB staining.

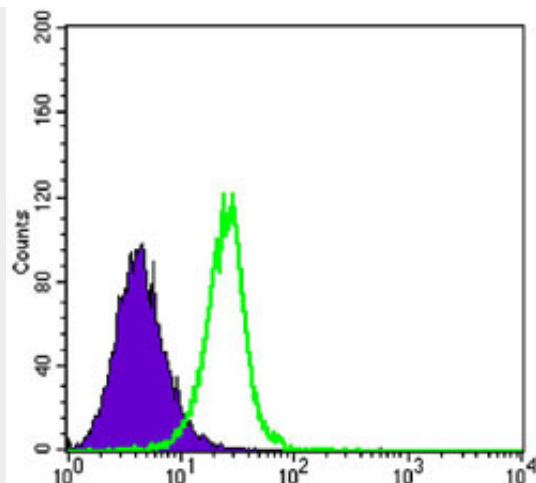


Figure 4: Flow cytometric analysis of K562 cells using SMAD4 mouse mAb (green) and negative control (purple).

#### **SMAD4 Antibody - References**

1. Am J Hum Genet. 2009 Nov;85(5):628-42.
2. Mol Endocrinol. 2010 Mar;24(3):540-51.