

SMAD5 Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1502a**Specification**

SMAD5 Antibody - Product Information

Application	WB, IHC, IF, FC
Primary Accession	O99717
Reactivity	Human, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	52kDa KDa

Description

Transcriptional modulator activated by BMP (bone morphogenetic proteins) type 1 receptor kinase. SMAD5 is a receptor-regulated SMAD (R-SMAD). SMAD5 is required for normal development of the cardiovascular system in vivo; lack of the SMAD5 gene results in apoptosis of cardiac myocytes. 3 Upregulation of SMAD5 has been reported to mediate apoptosis of gastric epithelial cells induced by Helicobacter pylori infection. Tissue specificity: Ubiquitous.

Immunogen

Purified recombinant fragment of human SMAD5 expressed in E. Coli.

Formulation

Ascitic fluid containing 0.03% sodium azide.

SMAD5 Antibody - Additional Information

Gene ID 4090

Other Names

Mothers against decapentaplegic homolog 5, MAD homolog 5, Mothers against DPP homolog 5, JV5-1, SMAD family member 5, SMAD 5, Smad5, hSmad5, SMAD5, MADH5

Dilution

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

SMAD5 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

SMAD5 Antibody - Protein Information

Name SMAD5**Synonyms** MADH5**Function**

Transcriptional regulator that plays a role in various cellular processes including embryonic development, cell differentiation, angiogenesis and tissue homeostasis (PubMed:12064918, PubMed:16516194). Upon BMP ligand binding to their receptors at the cell surface, is phosphorylated by activated type I BMP receptors (BMPRI) and associates with SMAD4 to form a heteromeric complex which translocates into the nucleus acting as transcription factor (PubMed:9442019). In turn, the hetero-trimeric complex recognizes cis- regulatory elements containing Smad Binding Elements (SBEs) to modulate the outcome of the signaling network (PubMed:33510867). Non-phosphorylated SMAD5 has a cytoplasmic role in energy metabolism regulation by promoting mitochondrial respiration and glycolysis in response to cytoplasmic pH changes (PubMed:28675158). Mechanistically, interacts with hexokinase 1/HK1 and thereby accelerates glycolysis (PubMed:28675158).

Cellular Location

Cytoplasm. Nucleus Mitochondrion. Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4

Tissue Location

Ubiquitous.

SMAD5 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](#)

SMAD5 Antibody - Images

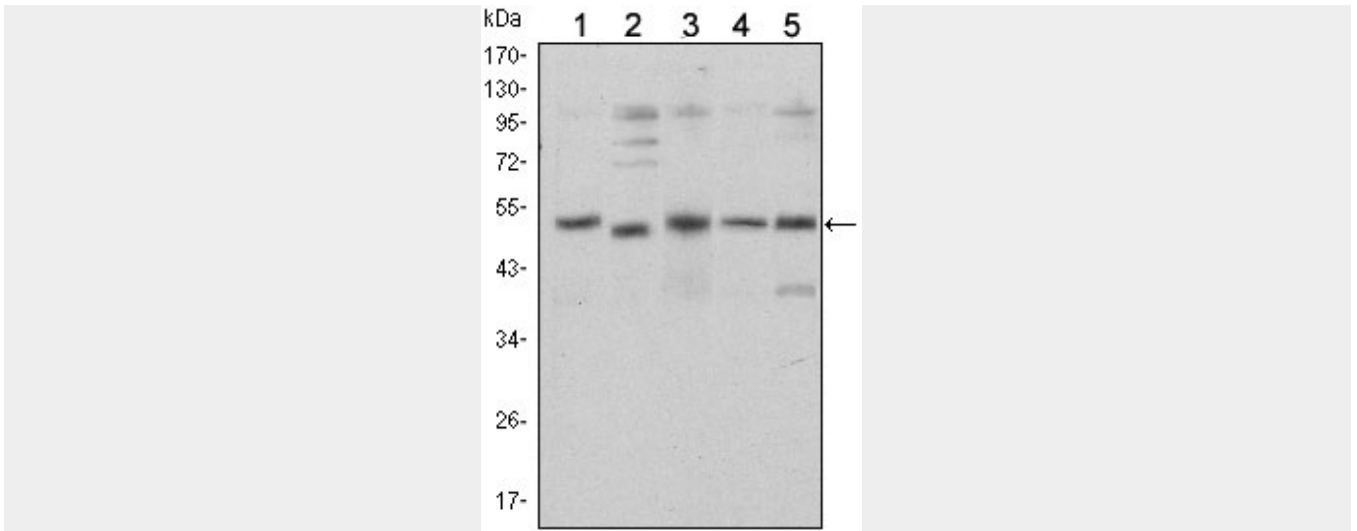


Figure 1: Western blot analysis using SMAD5 mouse mAb against HeLa (1), SK-N-SH (2), PC-12 (3), Jurkat (4), and K562 (5) cell lysate.

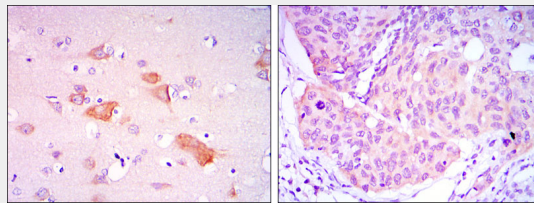


Figure 2: Immunohistochemical analysis of paraffin-embedded brain tissues (left) and lung cancer tissues (right) using SMAD5 mouse mAb with DAB staining.

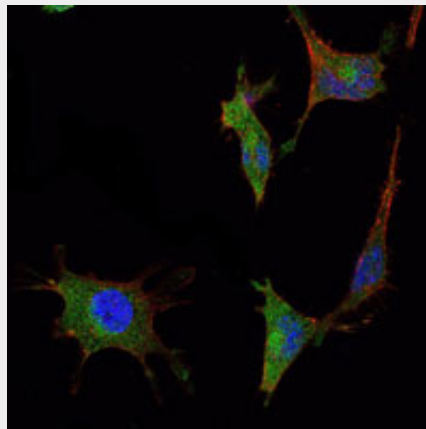


Figure 3: Immunofluorescence analysis of NTERA-2 cells using SMAD5 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

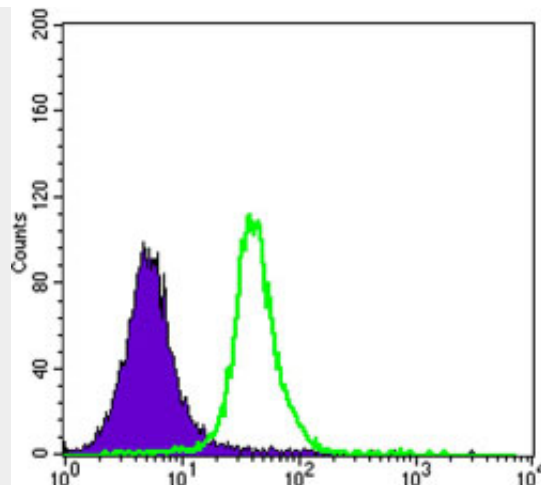


Figure 4: Flow cytometric analysis of Jurkat cells using SMAD5 mouse mAb (green) and negative control (purple).

SMAD5 Antibody - References

1. Proc Natl Acad Sci U S A. 2008 Mar 11;105(10):3927-32.
2. Nat Cell Biol. 2008 May;10(5):567-74.