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SMAD5 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1502a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	Q99717
Reactivity	Human, Rat
Host	Mouse
Clonality	Monoclonal
Clone Names	3H9
Isotype	IgG1
Calculated MW	52258
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.

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 FC~~1/200 - 1/400 ICC~~N/A E~~N/A
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.

Protein Information

Name	SMAD5 (HGNC:6771)

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 (BMPRIs) 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.

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.

Images

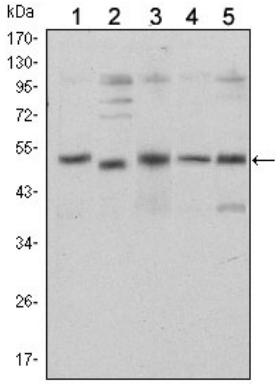


Figure 1: Western blot analysis using SMAD5 mouse mAb against Hela (1), SK-N-SH (2), PC-12 (3), Jurkat (4), and K562 (5) cell lysate.

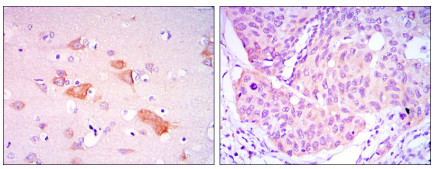
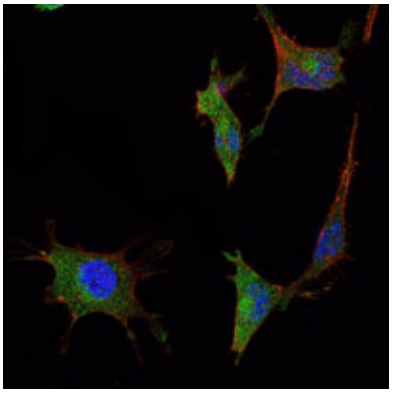


Figure 2: Immunohistochemical analysis of paraffin-embedded brain tissues (left) and lung cancer tissues (right) using SMAD5 mouse mAb with DAB staining.

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.



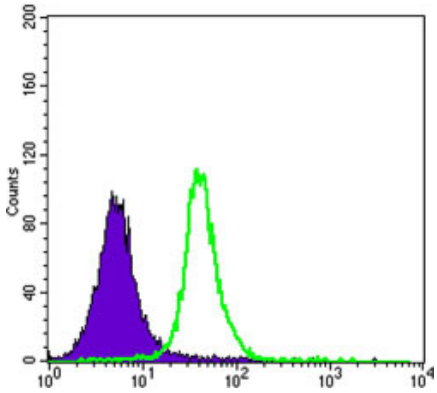


Figure 4: Flow cytometric analysis of Jurkat cells using SMAD5 mouse mAb (green) and negative control (purple).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.