

SMAD4 Antibody

Purified Mouse Monoclonal Antibody

Catalog # AO1444a

Product Information

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| Application | WB, IHC, FC, ICC, E |
| Primary Accession | Q13485 |
| Reactivity | Human |
| Host | Mouse |
| Clonality | Monoclonal |
| Clone Names | 4G1C6 |
| Isotype | IgG1 |
| Calculated MW | 60439 |
| 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. |
| Formulation | Ascitic fluid containing 0.03% sodium azide. |

Additional Information

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| 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 IHC~~1/500 - 1/2000 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 | SMAD4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

Protein Information

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| 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: 25514493). 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) |

References

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

Images

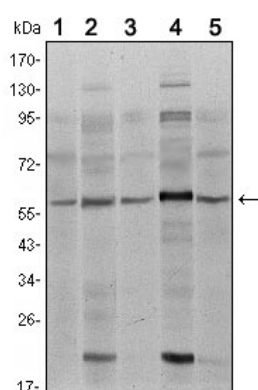


Figure 1: Western blot analysis using SMAD4 mouse mAb against A431 (1), SK-N-SH (2), K562 (3), HepG2 (4) and HUVE12 (5) cell lysate.

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.

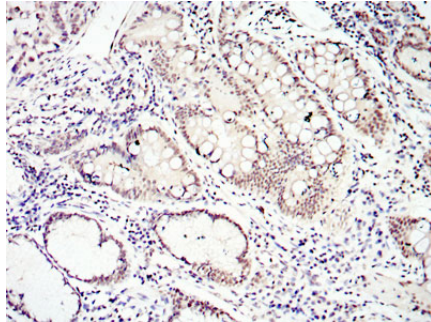
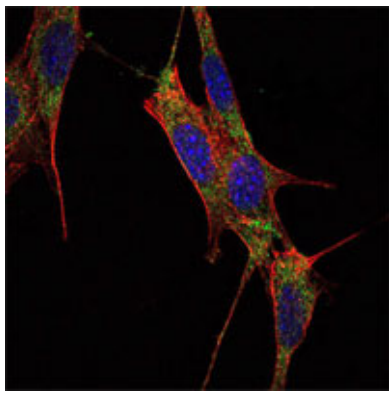


Figure 3: Immunohistochemical analysis of paraffin-embedded lung cancer tissues using SMAD4 mouse mAb with DAB staining.

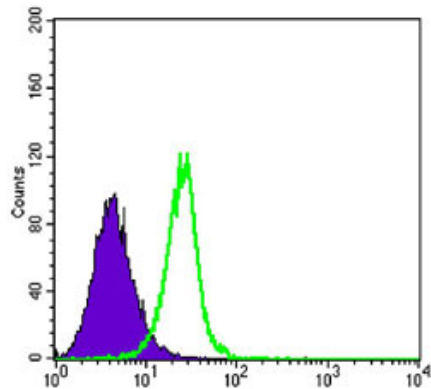


Figure 4: Flow cytometric analysis of K562 cells using SMAD4 mouse mAb (green) and negative control (purple).

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