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Mouse Monoclonal Antibody to SMAD1

Purified Mouse Monoclonal Antibody
Catalog # AO2364a

Product Information

Application	WB, E
Primary Accession	Q15797
Reactivity	Human, Mouse, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	4E12H10
Isotype	Mouse IgG1
Calculated MW	52260
Description	The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the Drosophila gene 'mothers against decapentaplegic' (Mad) and the C. elegans gene Sma. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. This protein mediates the signals of the bone morphogenetic proteins (BMPs), which are involved in a range of biological activities including cell growth, apoptosis, morphogenesis, development and immune responses. In response to BMP ligands, this protein can be phosphorylated and activated by the BMP receptor kinase. The phosphorylated form of this protein forms a complex with SMAD4, which is important for its function in the transcription regulation. This protein is a target for SMAD-specific E3 ubiquitin ligases, such as SMURF1 and SMURF2, and undergoes ubiquitination and proteasome-mediated degradation. Alternatively spliced transcript variants encoding the same protein have been observed.;
Immunogen	Purified recombinant fragment of human SMAD1 (AA: 1-110) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide
Application Note	ELISA: 1/10000; WB: 1/500 - 1/2000;

Additional Information

Gene ID	4086
Other Names	BSP1; JV41; BSP-1; JV4-1; MADH1; MADR1
Dilution	WB~~1:1000 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	Mouse Monoclonal Antibody to SMAD1 is for research use only and not for use in diagnostic or therapeutic procedures.

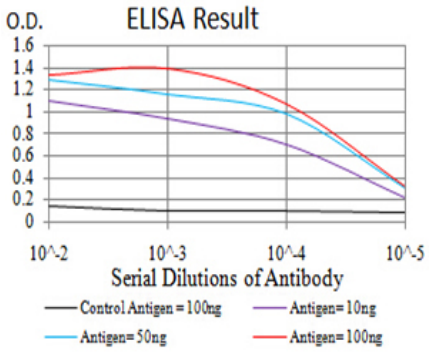
Protein Information

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 (BMPRIs) 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

References

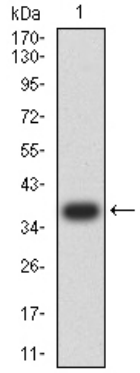
1.Histol Histopathol. 2011 Apr;26(4):531-41. ; 2.Blood. 2011 Jun 16;117(24):6489-97.;

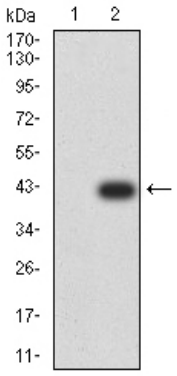
Images



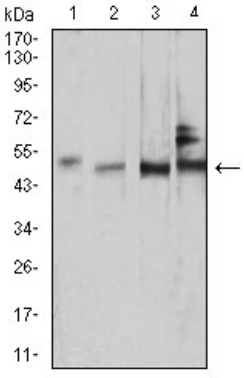
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

Western blot analysis using SMAD1 mAb against human SMAD1 (AA: 1-110) recombinant protein. (Expected MW is 38.5 kDa)





Western blot analysis using SMAD1 mAb against HEK293 (1) and SMAD1 (AA: 1-110)-hIgGFc transfected HEK293 (2) cell lysate.



Western blot analysis using SMAD1 mouse mAb against NIH/3T3 (1), COS7 (2), HUVEC (3), and C2C12 (4) cell lysate.