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SMAD1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5021

Product Information

Application	IF, IHC-P, WB
Primary Accession	Q15797
Other Accession	P97588, P70340, Q1JQA2
Reactivity	Human, Rat
Predicted	Mouse, Rat, Bovine
Host	Rabbit
Clonality	polyclonal
Calculated MW	52260
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	4086
Antigen Region	163-196
Other Names	Mothers against decapentaplegic homolog 1, MAD homolog 1, Mothers against DPP homolog 1, JV4-1, Mad-related protein 1, SMAD family member 1, SMAD 1, Smad1, hSMAD1, Transforming growth factor-beta-signaling protein 1, BSP-1, SMAD1, BSP1, MADH1, MADR1
Dilution	IF~~1:25 IHC-P~~1:100~500 WB~~1:1000
Target/Specificity	This SMAD1 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 163-196 amino acids from the Central region of human SMAD1.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SMAD1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SMAD1 (HGNC:6767)

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

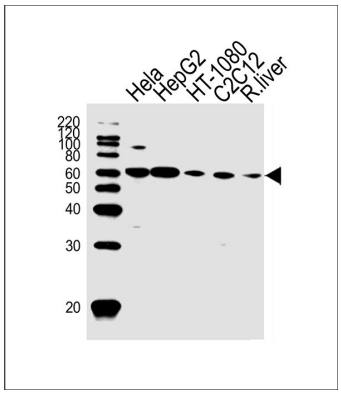
Background

Transcriptional modulator activated by BMP (bone morphogenetic proteins) type 1 receptor kinase. SMAD1 is a receptor-regulated SMAD (R-SMAD). SMAD1/OAZ1/PSMB4 complex mediates the degradation of the CREBBP/EP300 repressor SNIP1.

References

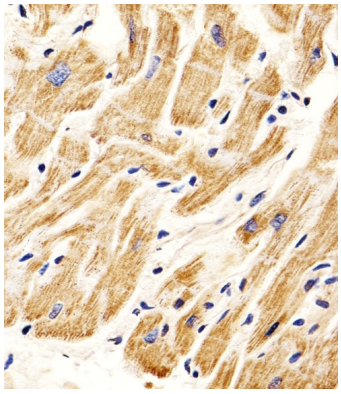
Riggins G.J.,et al.Nat. Genet. 13:347-349(1996).
Liu F.,et al.Nature 381:620-623(1996).
Hoodless P.A.,et al.Cell 85:489-500(1996).
Lechleider R.J.,et al.J. Biol. Chem. 271:17617-17620(1996).
Zhang Y.,et al.Nature 383:168-172(1996).

Images

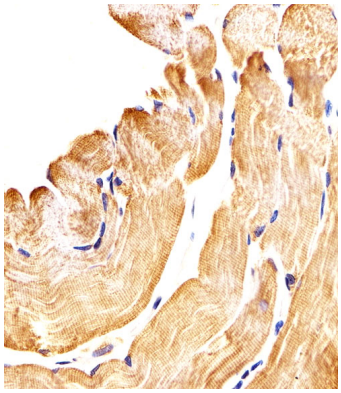


Western blot analysis of lysates from Hela,HepG2,HT-1080, mouse C2C12 cell line and rat liver tissue lysate (from left to right), using SMAD1 Antibody (Center)(Cat. #AW5021). AW5021 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.

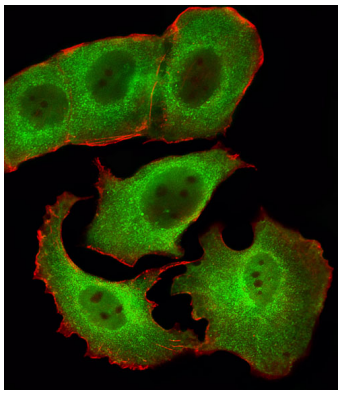
Immunohistochemical analysis of paraffin-embedded H. heart section using SMAD1 Antibody (Center)(Cat#AW5021). AW5021 was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at



1:400 dilution was used as the secondary antibody, followed by DAB staining.



Immunohistochemical analysis of paraffin-embedded H. skeletal muscle section using SMAD1 Antibody (Center)(Cat#AW5021). AW5021 was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.



Fluorescent image of MCF-7 cells stained with SMAD1 Antibody (Center)(Cat#AW5021). AW5021 was diluted at 1:25 dilution. An Alexa Fluor 488-conjugated goat anti-rabbit lgG at 1:400 dilution was used as the secondary antibody (green). Cytoplasmic actin was counterstained with Alexa Fluor® 555 conjugated with Phalloidin (red).