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Smad4 Antibody

Rabbit mAb
Catalog # AP90081

Product Information

Application	WB, IHC
Primary Accession	Q13485
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	MAD homolog 4; MAD, mothers against decapentaplegic homolog 4; MADH4; Mothers against decapentaplegic homolog 4; DPC4; hSMAD4; JIP;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	60439

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human Smad4
Description	Smad4 transcription factor that mediates signal transduction by the transforming growth factor superfamily. The common smad (co-smad). Binds directly to consensus DNA-binding elements in the promoters of target genes. Promotes binding of the Smad2/Smad4/Fast-1 complex to DNA and provides an activation function required for Smad1 or Smad2 to stimulate transcription.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

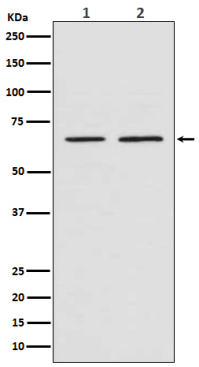
Name	SMAD4
Synonyms	DPC4, MADH4
Function	In muscle physiology, plays a central role in the balance between atrophy and hypertrophy. When recruited by MSTN, promotes atrophy response via phosphorylated SMAD2/4. MSTN decrease causes SMAD4 release and subsequent recruitment by the BMP pathway to promote 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)

Images



Western blot analysis of SMAD4 expression in (1) SH-SY5Y cell lysate; (2) NIH/3T3 cell lysate.

Image not found : 202311/AP90081-IHC.jpg

Immunohistochemical analysis of paraffin-embedded human breast cancer, using Smad4 Antibody.

Image not found : 202311/AP90081-wb6.jpg

Eplerenone Prevents Atrial Fibrosis via the TGF-β Signaling Pathway. -cardiology