SMAD4 Antibody

PRODUCT OVERVIEW

Product Name	Smad4, Antibody
Full Product Name	Smad4 Positive Control
Product Gene Name	anti-Smad4 antibody
Product Synonym Names	Mothers Against Decapentaplegic antibody Deleted in Pancreatic Carcinoma 4; Deleted in Pancreatic Carcinoma antibody DPC4; hSMAD4; JIP; MAD homolog 4; MAD mothers against decapentaplegic Drosophila homolog 4; MADH4; Med; Medea; Mothers against decapentaplegic, Drosophila, homolog of, 4; MYHRS; OTTHUMP00000163548; SMA- and MAD-related protein 4; Smad 4; SMAD family member 4; SMAD mothers against DPP homolog 4; SMAD4 antibody
Form/Format	Western Blot Positive Control
Preparation and Storage	-20• degree C for long term storage
Matching Pairs	Antibody: Smad4 (MBS540518) Positive Control: Smad4 (MBS543269)
Matching Pairs	Antibody: Smad4 (MBS544924) Positive Control: Smad4 (MBS543269)
Matching Pairs	Antibody: Smad4 (MBS544925) Positive Control: Smad4 (MBS543269)
Matching Pairs	Antibody: Smad4 (MBS544926) Positive Control: Smad4 (MBS543269)
Molecular Weight	60,439 Da
OMIM	114500
3D Structure	ModBase 3D Structure for Q13485
Immunogen	Purified Protein
Immunoglobulin	IgG
Molecular Function	Chromatin binding, core promoter proximal region sequence-specific DNA binding, identical protein binding I-SMAD binding, metal ion binding
Structure	Found in a complex with SMAD1 and YY1 (By similarity). Interacts with CITED2 (By similarity). Monomer; in the absence of TGF-beta activation. Heterodimer; on TGF-beta activation. Composed of two molecules of a C-terminally phosphorylated R-SMAD molecule, SMAD2 or SMAD3, and one molecule of SMAD4 to form the transcriptional active SMAD2/SMAD3-SMAD4 complex. Found in a ternary complex composed of SMAD4, STK11/LKB1 and STK11IP. Interacts with ATF2, COPS5, DACH1, MSG1, SKI, STK11/LKB1, STK11IP and TRIM33. Interacts with ZNF423; the interaction takes place in response to BMP2 leading to activation of transcription of BMP target genes. Interacts with ZNF521; the interaction takes place in response to BMP2 leading to activation of transcription of BMP target genes. Interacts with USP9X. Interacts (via the MH1 and MH2 domains) with RBPMS. Interacts with WWTR1 (via coiled-coil domain). Component of the multimeric complex SMAD3/SMAD4/JUN/FOS which forms at the AP1 promoter site; required for synergistic transcriptional activity in response to TGF-beta. Interacts with CITED1. Interacts with PDPK1 (via PH domain) (By similarity). Interacts with VPS39; this interaction affects heterodimer formation with SMAD3, but not with SMAD2, and leads to inhibition of SMAD3-dependent transcription activation. Interactions with VPS39 and SMAD2 may be mutually exclusive.
Subcellular Location	Cytoplasm, Nucleus (Note: Cytoplasmic in the absence of ligand. Migrates to Nucleus when complexed with R-SMAD. PDPK1 prevents its nuclea translocation in response to TGF-beta.

Applications Tested/Suitable for anti-Smad4 antibody	Western Blot (WB)
Application Notes for anti-Smad4 antibody	Western Blot: 1:500
Related Product Information for anti-Smad4 antibody	Western Blot Positive Control Mothers against decapentaplegic homolog 4 In muscle physiology, plays a central role in balance between atrophy and hypertrophy. May act as a tumor suppressor.
Other Notes	Small volumes of anti-Smad4 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Smad4 purchase	MBS543269 is an antibody targeting Smad4. Also known as Smad4 Positive Control.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Smad4. It may not necessarily be applicable to this product.

NCBI GI #	4885457
NCBI GeneID	4089
NCBI Accession #	NP_005350.1
UniProt Primary Accession #	Q13485
UniProt Secondary Accession #	A8K405
UniProt Related Accession #	Q13485
GenBank Nucleotide #	NM_005359.5
NCBI Official Full Name	mothers against decapentaplegic homolog 4
NCBI Official Synonym Full Names	SMAD family member 4
NCBI Official Symbol	SMAD4
NCBI Official Synonym Symbols	JIP; DPC4; MADH4; MYHRS
UniProt Protein Name	Mothers against decapentaplegic homolog 4
UniProt Synonym Protein Names	Deletion target in pancreatic carcinoma 4; SMAD family member 4; SMAD 4; Smad4; hSMAD4
Protein Family	Mothers against decapentaplegic
UniProt Gene Name	SMAD4
UniProt Synonym Gene Names	DPC4; MADH4; MAD homolog 4; Mothers against DPP homolog 4; SMAD 4; Smad4; hSMAD4
UniProt Entry Name	SMAD4_HUMAN
NCBI Protein Information	mothers against decapentaplegic homolog 4
NCBI Summary for Smad4	This gene encodes a member of the Smad family of signal transduction proteins. Smad proteins are phosphorylated and activated by transmembrane serine-threonine receptor kinases in response to TGF-beta signaling. The product of this gene forms homomeric complexes and heteromeric complexes with other activated Smad proteins, which then accumulate in the nucleus and regulate the transcription of target genes. This protein binds to DNA and recognizes an 8-bp palindromic sequence (GTCTAGAC) called the Smad-binding element (SBE). The Smad proteins are subject to complex regulation by post-translational modifications. Mutations or deletions in this gene have been shown to result in pancreatic cancer, juvenile polyposis syndrome, and hereditary hemorrhagic telangiectasia syndrome. [provided by RefSeq, Oct 2009]

UniProt Comments for Smad4	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. Protein type: Transcription, coactivator/corepressor; DNA-binding; Nuclear receptor co-regulator Chromosomal Location of Human Ortholog: 18q21.1 Cellular Component: cytoplasm; cytosol; nuclear chromatin; nucleoplasm; nucleus; transcription factor complex Molecular Function: chromatin binding; collagen binding; DNA binding; identical protein binding; metal ion binding; protein binding; protein heterodimerization activity; protein homodimerization activity; sequence-specific DNA binding; transcription factor activity; transforming growth factor beta receptor, common-partner cytoplasmic mediator activity Biological Process: axon guidance; BMP signaling pathway; cell proliferation; cellular iron ion homeostasis; developmental growth; embryonic digit morphogenesis; endoderm development; endothelial cell activation; formation of anatomical boundary; gastrulation with mouth forming second; in utero embryonic development; mesoderm development; negative regulation of cell growth; negative regulation of cell proliferation; negative regulation of protein catabolic process; negative regulation of transcription from RNA polymerase II promoter; negative regulation of transcription, DNA-dependent; neural crest cell differentiation; neuron fate commitment; ovarian follicle development; palate development; positive regulation of BMP signaling pathway; positive regulation of follicle-stimulating hormone secretion; positive regulation of histone H3-K4 methylation; positive regulation of luteinizing hormone secretion; positive regulation of transcription from RNA polymerase II promoter; positive regulation of transcription, DNA-dependent; positive regulation of transforming growth factor beta receptor signaling pathway; regulation of binding; regulation of hair follicle development; regulation of transforming growth factor beta receptor signaling pathway; regulation of transforming growth factor-beta2 production; response to hypoxia; sebaceous gland development; single fertilization; SMAD protein complex assembly; somatic stem cell maintenance; somite rostral/caudal axis specification; spermatogenesis; transcription from RNA polymerase II promoter; transforming growth factor beta receptor signaling pathway; ureteric bud branching; uterus development Disease: Juvenile Polyposis Syndrome; Juvenile Polyposis/hereditary Hemorrhagic Telangiectasia Syndrome; Myhre Syndrome; Pancreatic Cancer
Research Articles on Smad4	**1.** NEK6 suppresses the cell growth arrest induced by TGFbeta. Mechanically, NEK6 blocks nuclear translocation of Smad4, which is essential for TGFbeta function.
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