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Anti-SMAD 1/2/3/5 Antibody

Catalog # ABO10657

Specification

Anti-SMAD 1/2/3/5 Antibody - Product Information

Application	**WB**
Primary Accession	Q15797
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Mothers against decapentaplegic homolog 1/2/3/5(SMAD1/2/3/5) detection. Tested with WB in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-SMAD 1/2/3/5 Antibody - Additional Information

Gene ID 4086

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

Calculated MW
52260 MW KDa

Application Details
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

Subcellular Localization
Cytoplasm. Nucleus. Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4. Co-localizes with LEMD3 at the nucleus inner membrane.

Tissue Specificity
Ubiquitous. Highest expression seen in the heart and skeletal muscle.

Protein Name
Mothers against decapentaplegic homolog 1/2/3/5

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the C-terminus of human SMAD1/2/3/5 (GPLQWLDKVLTQMGS), identical to the related mouse and rat sequences.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the dwarfin/SMAD family.

Anti-SMAD 1/2/3/5 Antibody - 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 an 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

Anti-SMAD 1/2/3/5 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

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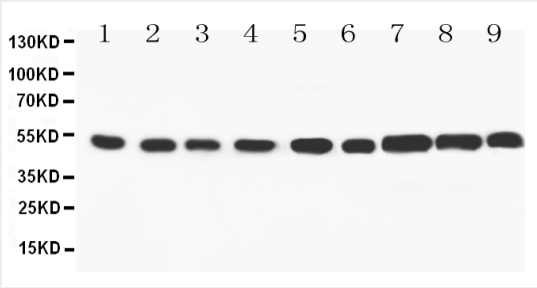
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-SMAD 1/2/3/5 Antibody - Images



Anti-SMAD 1/2/3/5 antibody, ABO10657, Western blottingLane 1: Rat Heart Tissue LysateLane 2: Rat Skeletal Muscle Tissue LysateLane 3: Rat Kidney Tissue LysateLane 4: Rat Brain Tissue LysateLane 5: MM453 Cell LysateLane 6: MM231 Cell Lysate Lane 7: HELA Cell LysateLane 8: SMMC Cell LysateLane 9: SW620 Cell Lysate

Anti-SMAD 1/2/3/5 Antibody - Background

SMADs are proteins that modulate the activity of transforming growth factor beta ligands. The SMADs, often in complex with other SMADs/CoSMAD, act as transcription factors that regulate the expression of certain genes. Zhu, H et al concluded that targeted ubiquitination of SMADs may serve to control both embryonic development and a wide variety of cellular responses to TGF-beta signals. R-Smads or receptor regulated Smads are a class of proteins that include SMAD1, SMAD2, SMAD3, SMAD5, and SMAD8. In response to signals by the TGF-beta superfamily of ligands these proteins associate with receptor kinases and are phosphorylated at an SSXS motif at their extreme C-terminus. These proteins then typically bind to the common mediator Smad or co-SMAD SMAD4.