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Anti-SMAD5 Antibody
Catalog # ABO11422

Specification

Anti-SMAD5 Antibody - Product Information

Application	**WB, IHC-P**
Primary Accession	Q99717
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Mothers against decapentaplegic homolog 5(SMAD5) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

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

Anti-SMAD5 Antibody - Additional Information

Gene ID 4090

Other Names
Mothers against decapentaplegic homolog 5, MAD homolog 5, Mothers against DPP homolog 5, JV5-1, SMAD family member 5, SMAD 5, Smad5, hSmad5, SMAD5, MADH5

Calculated MW
52258 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Rat, Mouse, By Heat
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.

Tissue Specificity
Ubiquitous.

Protein Name
Mothers against decapentaplegic homolog 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 in the middle region of human SMAD5(248-267aa IPQIMPSISSRDVQPVAYEE), identical to the related rat sequence, and different from the related

mouse sequence by one amino acid.

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-SMAD5 Antibody - Protein Information

Name SMAD5 (HGNC:6771)

Synonyms MADH5

Function
Transcriptional regulator that plays a role in various cellular processes including embryonic development, cell differentiation, angiogenesis and tissue homeostasis (PubMed:12064918, PubMed:16516194). 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:9442019). In turn, the hetero-trimeric complex recognizes cis- regulatory elements containing Smad Binding Elements (SBEs) to modulate the outcome of the signaling network (PubMed:33510867). Non-phosphorylated SMAD5 has a cytoplasmic role in energy metabolism regulation by promoting mitochondrial respiration and glycolysis in response to cytoplasmic pH changes (PubMed:28675158). Mechanistically, interacts with hexokinase 1/HK1 and thereby accelerates glycolysis (PubMed:28675158).

Cellular Location
Cytoplasm. Nucleus Mitochondrion. Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4

Tissue Location
Ubiquitous.

Anti-SMAD5 Antibody - Protocols

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

- Western Blot
- Blocking Peptides

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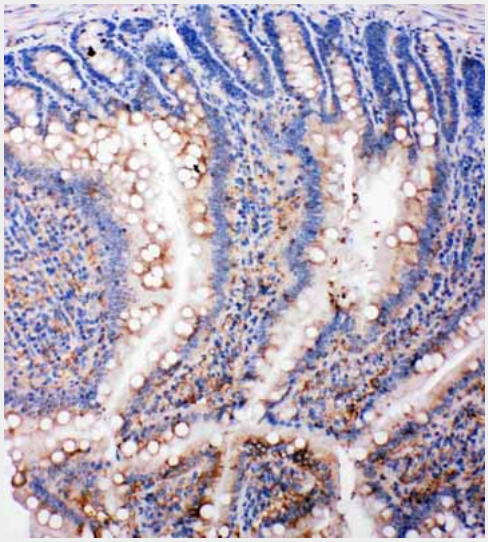
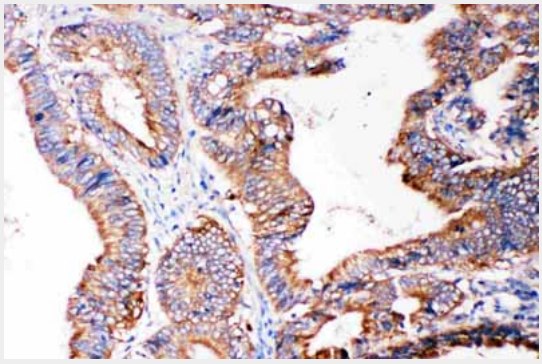
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

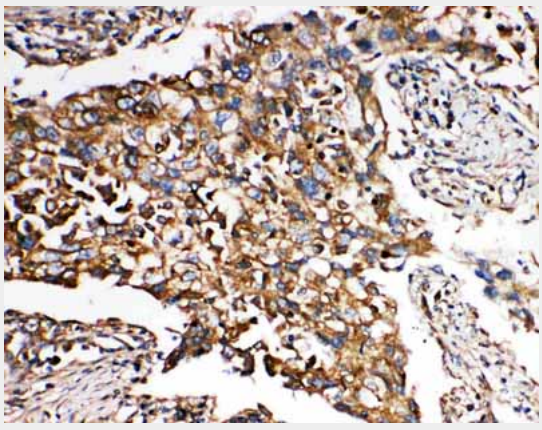
Anti-SMAD5 Antibody - Images



Anti-SMAD5 antibody, ABO11422, IHC(P)IHC(P): Rat Intestine Tissue



Anti-SMAD5 antibody, ABO11422, IHC(P)IHC(P): Human Intestinal Cancer Tissue



Anti-SMAD5 antibody, ABO11422, IHC(P)IHC(P): Human Lung Cancer Tissue

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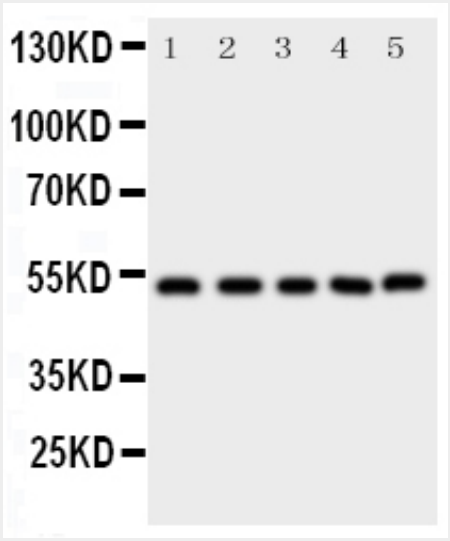

Anti-SMAD5 antibody, ABO11422, Western blottingAll lanes: Anti SMAD5 (ABO11422) at 0.5ug/mlLane 1: K562 Whole Cell Lysate at 40ugLane 2: JURKAT Whole Cell Lysate at 40ugLane 3: PC 1-2 Whole Cell Lysate at 40ugLane 4: HELA Whole Cell Lysate at 40ugLane 5: SMMC Whole Cell Lysate at 40ugPredicted bind size: 52 KDObserved bind size: 52KD

Anti-SMAD5 Antibody - Background

Mother against decapentaplegic homolog 5 also known as SMAD5 is a protein that in humans is encoded by the SAMD5 gene. It belongs to the SMAD family of proteins, which belong to the TGFbeta superfamily of modulators. The gene was assigned to human chromosome 5q31. Like many other TGFbeta family members SMAD5 is involved in cell signalling and modulates signals of bone morphogenetic proteins(BMP's). It may play a role in the pathway where TGFbeta is an inhibitor of hematopoietic progenitor cells.