

**Anti-SMAD5 Antibody**  
Catalog # ABO11422**Specification****Anti-SMAD5 Antibody - Product Information**

Application	IHC, WB
Primary Accession	<a href="#">Q99717</a>
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<br>Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse<br>

**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 Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Thimerosal, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence in the middle region of human SMAD5(248-267aa IPQIMPSISSRDVQP VAYEE), 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 reconstitution, 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 Smad family.

**Anti-SMAD5 Antibody - Protein Information**

**Name** SMAD5

**Synonyms** MADH5

**Function**

Transcriptional regulator that plays a role in various cellular processes including embryonic development, cell differentiation, angiogenesis and tissue homeostasis (PubMed: [12064918](http://www.uniprot.org/citations/12064918), PubMed: [16516194](http://www.uniprot.org/citations/16516194)). Upon BMP ligand binding to their receptors at the cell surface, is phosphorylated by activated type I BMP receptors (BMPRI) and associates with SMAD4 to form a heteromeric complex which translocates into the nucleus acting as transcription factor (PubMed: [9442019](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/28675158)). Mechanistically, interacts with hexokinase 1/HK1 and thereby accelerates glycolysis (PubMed: [28675158](http://www.uniprot.org/citations/28675158)).

**Cellular Location**

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

**Tissue Location**

Ubiquitous.

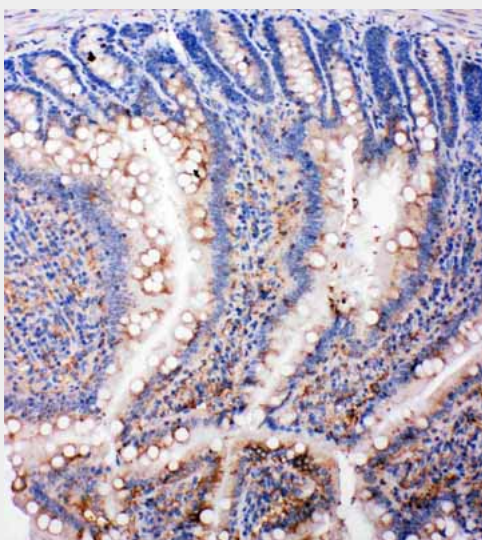
**Anti-SMAD5 Antibody - Protocols**

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

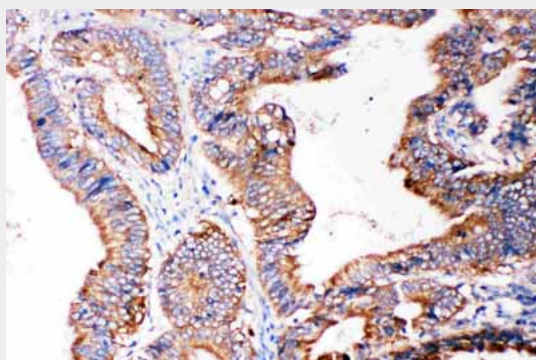
- [Western Blot](#)
- [Blocking Peptides](#)

- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

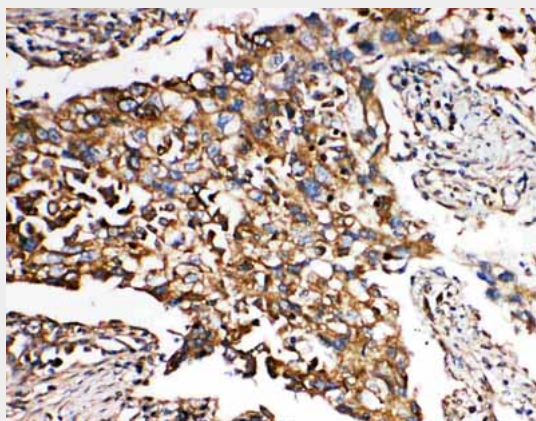
### Anti-SMAD5 Antibody - Images



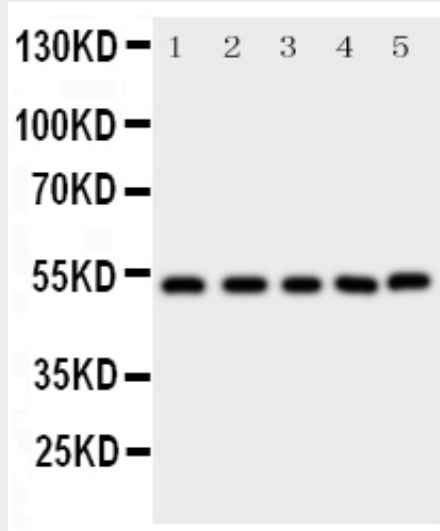
Anti-SMAD5 antibody, ABO11422, IHC(P)IHC(P): Rat Intestine Tissue



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



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



Anti-SMAD5 antibody, ABO11422, Western blotting All lanes: Anti SMAD5 (ABO11422) at 0.5ug/ml  
Lane 1: K562 Whole Cell Lysate at 40ug  
Lane 2: JURKAT Whole Cell Lysate at 40ug  
Lane 3: PC 1-2 Whole Cell Lysate at 40ug  
Lane 4: HELA Whole Cell Lysate at 40ug  
Lane 5: SMMC Whole Cell Lysate at 40ug  
Predicted bind size: 52 KD  
Observed 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.