

**Anti-SMAD3 (RABBIT) Antibody**  
**SMAD3 Antibody**  
**Catalog # ASR5382****Specification****Anti-SMAD3 (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Rat, Human, Mouse
Clonality	Polyclonal
Application	WB, E, I, LCI
Application Note	This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 50 kDa in size corresponding to Smad3 protein by western blotting in the appropriate cell lysate or extract.
Physical State	Liquid (sterile filtered)
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Immunogen	This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an internal region of human Smad3 protein.
Preservative	0.01% (w/v) Sodium Azide

**Anti-SMAD3 (RABBIT) Antibody - Additional Information****Gene ID** 4088**Other Names**  
4088**Purity**

This affinity purified antibody is directed against human Smad3 protein. The product was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with Smad3 protein from human, mouse and rat based on 100% homology with the immunizing sequence. Reactivity against homologues from other sources is not known. Also, the antibody is Smad3 specific, and reactivity to other Smad proteins (specifically Smad1, Smad2, Smad4, and Smad7) is not detected in over-expressed cell lysates (Personal Communication, Kathleen Flanders, CCR-NCI, Bethesda, MD).

**Storage Condition**

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted

liquid. Dilute only prior to immediate use.

#### **Precautions Note**

This product is for research use only and is not intended for therapeutic or diagnostic applications.

### **Anti-SMAD3 (RABBIT) Antibody - Protein Information**

**Name** SMAD3

**Synonyms** MADH3

#### **Function**

Receptor-regulated SMAD (R-SMAD) that is an intracellular signal transducer and transcriptional modulator activated by TGF-beta (transforming growth factor) and activin type 1 receptor kinases. Binds the TRE element in the promoter region of many genes that are regulated by TGF-beta and, on formation of the SMAD3/SMAD4 complex, activates transcription. Also can form a SMAD3/SMAD4/JUN/FOS complex at the AP- 1/SMAD site to regulate TGF-beta-mediated transcription. Has an inhibitory effect on wound healing probably by modulating both growth and migration of primary keratinocytes and by altering the TGF-mediated chemotaxis of monocytes. This effect on wound healing appears to be hormone-sensitive. Regulator of chondrogenesis and osteogenesis and inhibits early healing of bone fractures. Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator.

#### **Cellular Location**

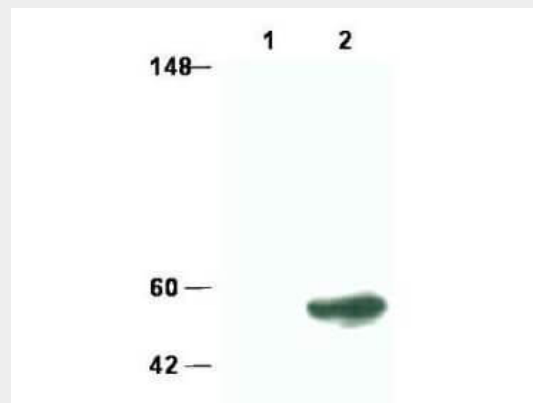
Cytoplasm. Nucleus. Note=Cytoplasmic and nuclear in the absence of TGF-beta. On TGF-beta stimulation, migrates to the nucleus when complexed with SMAD4 (PubMed:15799969, PubMed:21145499). Through the action of the phosphatase PPM1A, released from the SMAD2/SMAD4 complex, and exported out of the nucleus by interaction with RANBP1 (PubMed:16751101, PubMed:19289081). Co-localizes with LEMD3 at the nucleus inner membrane (PubMed:15601644). MAPK-mediated phosphorylation appears to have no effect on nuclear import (PubMed:19218245). PDPK1 prevents its nuclear translocation in response to TGF-beta (PubMed:17327236). Localized mainly to the nucleus in the early stages of embryo development with expression becoming evident in the cytoplasm of the inner cell mass at the blastocyst stage (By similarity) {ECO:0000250|UniProtKB:Q8BUN5, ECO:0000269|PubMed:15601644, ECO:0000269|PubMed:15799969, ECO:0000269|PubMed:16751101, ECO:0000269|PubMed:17327236, ECO:0000269|PubMed:19218245, ECO:0000269|PubMed:19289081, ECO:0000269|PubMed:21145499}

### **Anti-SMAD3 (RABBIT) 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-SMAD3 (RABBIT) Antibody - Images**



Western blot using Rockland's affinity purified anti-Smad3 to detect over-expressed Smad3 in 231 cells (lane 2). Lane 1 shows mock infection of 231 cells with lentiviral vector alone. The membrane was probed with the primary antibody at a 1:5,000 dilution. Personal Communication, Allan Weissman, CCR-NCI, Bethesda, MD. Personal Communication

#### **Anti-SMAD3 (RABBIT) Antibody - Background**

This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. Smad3 (also known as Mothers against decapentaplegic homolog 3, Mothers against DPP homolog 3, Mad3, hMAD-3, JV15-2 or hSMAD3) is a transcriptional modulator activated by TGF- $\beta$  (transforming growth factor) and activin type I receptor kinase. These activators exert diverse effects on a wide array of cellular processes. The Smad proteins mediate much of the signaling responses induced by the TGF- $\beta$  superfamily. Briefly, activin type I receptor kinase phosphorylates receptor-activated Smads (R-Smads) at the two extreme serines in the C-terminal SSXS motif; e.g. Smad2 and Smad3 proteins in the TGF- $\beta$  pathway, or Smad1, Smad5 or Smad8 in the Bone Morphogenetic Proteins (BMP) pathway. The phosphorylated R-Smad then translocates into the nucleus, where it regulates transcription of target genes. Based on microarray and animal model experiments, Smad3 accounts for at least 80% of all TGF- $\beta$ -mediated responses.