

**Anti-SMAD3 (RABBIT) Antibody**  
**SMAD3 Antibody**  
**Catalog # ASR5343**

**Specification**

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**Anti-SMAD3 (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human, Mouse
Clonality	Polyclonal
Application	WB, IHC, E, I, LCI
Application Note	This affinity purified antibody has been tested for use in ELISA, immunohistochemistry and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 48 kDa in size corresponding to Smad3 protein by western blotting in the appropriate stimulated tissue or cell lysate or extract. This reagent reacts equally to phosphorylated and non-phosphorylated Smad3 by ELISA and western blotting.
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 the C-terminal domain of human SMAD3 protein.
Preservative	0.01% (w/v) Sodium Azide

**Anti-SMAD3 (RABBIT) Antibody - Additional Information**

**Gene ID** 4088

**Other Names**  
4088

**Purity**

SMAD3 affinity-purified antibody is directed against human Smad3 protein. The product was affinity purified from monospecific antiserum by immunoaffinity purification. A BLAST analysis was used to suggest reactivity with this protein from human, mouse, rat, swine, and chicken sources based on 100% homology for the immunogen sequence. ELISA and western blot show equivalent reactivity against phosphorylated and non-phosphorylated human SMAD3.

**Storage Condition**

Store Anti-SMAD3 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**



Rockland's Affinity Purified anti-Smad3 antibody shows strong cytoplasmic and membranous staining of tumor cells in cancerous human liver tissue. Tissue was formalin-fixed and paraffin embedded. Brown color indicates presence of protein, blue color shows cell nuclei. Personal Communication, Kenneth Wester, [www.proteinatlas.org](http://www.proteinatlas.org), Uppsala, Sweden.

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

Anti-SMAD3 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 1 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, activated type I receptor phosphorylates receptor-activated Smads (R-Smads) at their c-terminal two extreme serines in the SSXS motif, e.g. Smad2 and Smad3 proteins in the TGF- $\beta$  pathway, or Smad1, Smad5 or Smad8 in the BMP pathway. Then the phosphorylated R-Smad translocated into nucleus, where they regulate transcription of target genes. Based on microarray and animal model experiments, Smad3 accounts for at least 80% of all TGF- $\beta$ -mediated response.