

**Phospho-SMAD3(S213) Antibody**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP3250a**

## Specification

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### Phospho-SMAD3(S213) Antibody - Product Information

|                   |   |
|-------------------|---|
| Application       | WB, IHC-P,E   |
| Primary Accession | <a href="#">P84022</a>  |
| Other Accession   | <a href="#">P84025</a> , <a href="#">P84024</a> , <a href="#">Q8BUN5</a> , <a href="#">P84023</a> |
| Reactivity        | Human   |
| Predicted         | Chicken, Mouse, Pig, Rat  |
| Host              | Rabbit  |
| Clonality         | Polyclonal  |
| Isotype           | Rabbit IgG  |

### Phospho-SMAD3(S213) Antibody - Additional Information

**Gene ID** 4088

#### Other Names

Mothers against decapentaplegic homolog 3, MAD homolog 3, Mad3, Mothers against DPP homolog 3, hMAD-3, JV15-2, SMAD family member 3, SMAD 3, Smad3, hSMAD3, SMAD3, MADH3

#### Target/Specificity

This SMAD3 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S213 of human SMAD3.

#### Dilution

WB~~1:1000  
IHC-P~~1:50~100

#### Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

#### Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

#### Precautions

Phospho-SMAD3(S213) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Phospho-SMAD3(S213) 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**

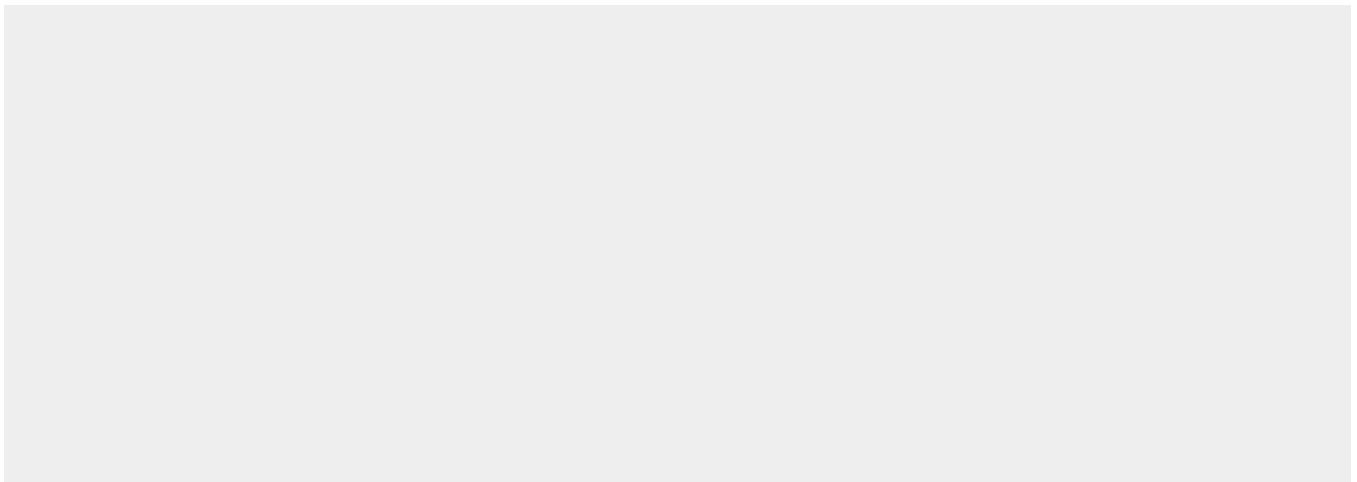
Cytoplasm. Nucleus. Note=Cytoplasmic and nuclear in the absence of TGF-beta. On TGF-beta stimulation, migrates to the nucleus when complexed with SMAD4 (PubMed:15799969, PubMed:21145499). Through the action of the phosphatase PPM1A, released from the SMAD2/SMAD4 complex, and exported out of the nucleus 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}

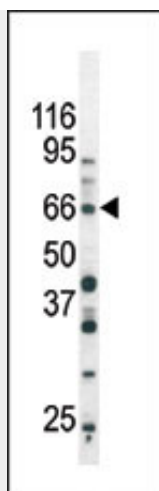
#### **Phospho-SMAD3(S213) Antibody - Protocols**

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

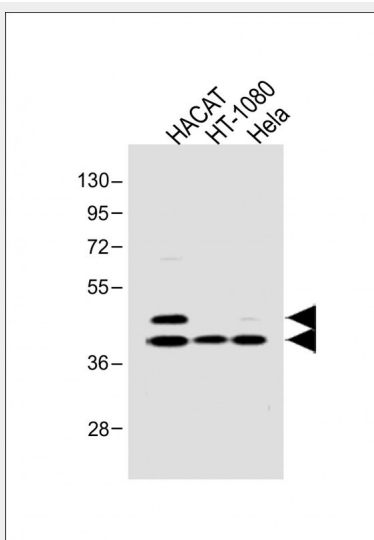
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **Phospho-SMAD3(S213) Antibody - Images**

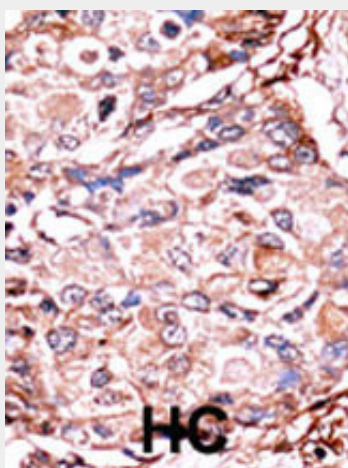




The anti-Phospho-SMAD3-S213 Pab (Cat. #AP3250a) is used in Western blot to detect Phospho-SMAD3-S213 in Ramos tissue lysate



All lanes : Anti-SMAD3(S213) Antibody at 1:1000 dilution Lane 1: HACAT whole cell lysate Lane 2: HT-1080 whole cell lysate Lane 3: HeLa whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 48, 43 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody,

which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

### **Phospho-SMAD3(S213) Antibody - Background**

SMAD3, a receptor regulated SMAD (R-SMAD) is a transcriptional modulator activated by TGF-beta (transforming growth factor) and activin type 1 receptor kinase. SMAD3 is estimated to account for at least 80% of all TGF-beta-mediated response. Activated type I receptor phosphorylates receptor-activated SMADS (RSMADS) at their c-terminal two extreme serines in the SSXS motif. The phosphorylated R-SMAD translocate into nucleus, where they regulate transcription of target genes. SMAD3 signal transduction appears to be important in the regulation of muscle-specific genes. Loss of SMAD3 is a feature of pediatric T-cell lymphoblastic leukemia, while upregulation of SMAD3 may be responsible for TGF-beta hyperresponsiveness observed in scleroderma.

### **Phospho-SMAD3(S213) Antibody - References**

Imoto, S., et al., FEBS Lett. 579(13):2853-2862 (2005).  
Dubrovskaja, A., et al., Oncogene 24(14):2289-2297 (2005).  
Furumatsu, T., et al., J. Biol. Chem. 280(9):8343-8350 (2005).  
Kobayashi, T., et al., Biochem. Biophys. Res. Commun. 327(2):393-398 (2005).  
Kumarajulu, A.K., et al., J. Biol. Chem. 280(2):1024-1036 (2005).

### **Phospho-SMAD3(S213) Antibody - Citations**

- [Tripartite motif protein 52 \(TRIM52\) promoted fibrosis in LX-2 cells through PPM1A-mediated Smad2/3 pathway.](#)
- [Asiaticoside hinders the invasive growth of keloid fibroblasts through inhibition of the GDF-9/MAPK/Smad pathway.](#)