

**Goat Anti-SMAD2 / MADH2 Antibody**  
Peptide-affinity purified goat antibody  
Catalog # AF2003a

**Specification**

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**Goat Anti-SMAD2 / MADH2 Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">Q15796</a>
Other Accession	<a href="#">NP_005892</a> , <a href="#">4087</a>
Reactivity	Human
Host	Goat
Clonality	Polyclonal
Concentration	100ug/200ul
Isotype	IgG
Calculated MW	52306

**Goat Anti-SMAD2 / MADH2 Antibody - Additional Information**

**Gene ID** 4087

**Other Names**

Mothers against decapentaplegic homolog 2, MAD homolog 2, Mothers against DPP homolog 2, JV18-1, Mad-related protein 2, hMAD-2, SMAD family member 2, SMAD 2, Smad2, hSMAD2, SMAD2, MADH2, MADR2

**Format**

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Goat Anti-SMAD2 / MADH2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Goat Anti-SMAD2 / MADH2 Antibody - Protein Information**

**Name** SMAD2

**Synonyms** MADH2, MADR2

**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 SMAD2/SMAD4 complex, activates transcription. Promotes TGF $\beta$ 1-mediated transcription of odontoblastic differentiation genes in dental papilla cells (By similarity). Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator. May act as a tumor suppressor in colorectal carcinoma (PubMed:<a href="http://www.uniprot.org/citations/8752209" target="\_blank">8752209</a>).

#### 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 or with IPO7 (PubMed:21145499, PubMed:9865696). On dephosphorylation by phosphatase PPM1A, released from the SMAD2/SMAD4 complex, and exported out of the nucleus by interaction with RANBP1 (PubMed:16751101, PubMed:19289081). Localized mainly to the nucleus in the early stages of embryo development with expression becoming evident in the cytoplasm at the blastocyst and epiblast stages (By similarity). {ECO:0000250|UniProtKB:Q62432, ECO:0000269|PubMed:16751101, ECO:0000269|PubMed:19289081, ECO:0000269|PubMed:21145499, ECO:0000269|PubMed:9865696}

#### Tissue Location

Expressed at high levels in skeletal muscle, endothelial cells, heart and placenta.

### Goat Anti-SMAD2 / MADH2 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](#)

### Goat Anti-SMAD2 / MADH2 Antibody - Images



AF2003a staining (2  $\mu$ g/ml) of HeLa lysate (RIPA buffer, 35  $\mu$ g total protein per lane). Primary incubated for 1 hour. Detected by western blot using chemiluminescence.

## Goat Anti-SMAD2 / MADH2 Antibody - Background

The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the *Drosophila* gene 'mothers against decapentaplegic' (Mad) and the *C. elegans* gene Sma. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. This protein mediates the signal of the transforming growth factor (TGF)-beta, and thus regulates multiple cellular processes, such as cell proliferation, apoptosis, and differentiation. This protein is recruited to the TGF-beta receptors through its interaction with the SMAD anchor for receptor activation (SARA) protein. In response to TGF-beta signal, this protein is phosphorylated by the TGF-beta receptors. The phosphorylation induces the dissociation of this protein with SARA and the association with the family member SMAD4. The association with SMAD4 is important for the translocation of this protein into the nucleus, where it binds to target promoters and forms a transcription repressor complex with other cofactors. This protein can also be phosphorylated by activin type 1 receptor kinase, and mediates the signal from the activin. Alternatively spliced transcript variants encoding the same protein have been observed.

## Goat Anti-SMAD2 / MADH2 Antibody - References

Maternal genes and facial clefts in offspring: a comprehensive search for genetic associations in two population-based cleft studies from Scandinavia. Jugessur A, et al. PLoS One, 2010 Jul 9. PMID 20634891.

Somatic mutations and germline sequence variants in patients with familial colorectal cancer. Gylfe AE, et al. Int J Cancer, 2010 Jun 29. PMID 20589678.

Smad2 and Smad6 as predictors of overall survival in oral squamous cell carcinoma patients. Mangone FR, et al. Mol Cancer, 2010 May 12. PMID 20462450.

Induced expression of bone morphogenetic protein-6 and Smads signaling in human monocytes derived dendritic cells during sickle-cell pathology with orthopedic complications. Abhishek K, et al. Biochem Biophys Res Commun, 2010 Jun 11. PMID 20460105.

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