

Smad2 Polyclonal Antibody

Catalog No :	YT4329
Reactivity :	Human;Mouse;Rat
Applications :	WB;CoIP;IHC;IF;ELISA
Target :	Smad2
Fields :	>>Cell cycle;>>Endocytosis;>>Cellular senescence;>>TGF-beta signaling pathway;>>Apelin signaling pathway;>>Hippo signaling pathway;>>Signaling pathways regulating pluripotency of stem cells;>>Th17 cell differentiation;>>Relaxin signaling pathway;>>AGE-RAGE signaling pathway in diabetic complications;>>Chagas disease;>>Human T-cell leukemia virus 1 infection;>>Pathways in cancer;>>Proteoglycans in cancer;>>Colorectal cancer;>>Pancreatic cancer;>>Hepatocellular carcinoma;>>Gastric cancer;>>Inflammatory bowel disease;>>Diabetic cardiomyopathy
Gene Name :	SMAD2
Protein Name :	Mothers against decapentaplegic homolog 2
Human Gene Id :	4087
Human Swiss Prot No :	Q15796
Mouse Gene Id :	17126
Mouse Swiss Prot No :	Q62432
Rat Gene Id :	29357
Rat Swiss Prot No :	O70436
Immunogen :	The antiserum was produced against synthesized peptide derived from human Smad2. AA range:418-467
Specificity :	Smad2 Polyclonal Antibody detects endogenous levels of Smad2 protein. Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Formulation :	Polyclonal, Rabbit,IgG
Dilution :	WB 1:500 - 1:2000. IHC 1:100 - 1:300. IF 1:200 - 1:1000. ELISA: 1:5000. Not yet tested in other applications.
Purification :	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Concentration :	1 mg/ml
Storage Stability :	-15°C to -25°C/1 year(Do not lower than -25°C)
Observed Band :	58kD
Cell Pathway :	Regulates Angiogenesis; Cell_Cycle_G1S;Cell_Cycle_G2M_DNA; Protein_Acetylation
Background :	<p>The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the Drosophila gene <i>mothers against decapentaplegic</i> (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</p>
Function :	<p>disease:Defects in SMAD2 are found in sporadic cases of colorectal carcinoma.,function:Transcriptional modulator activated by TGF-beta and activin type 1 receptor kinase. SMAD2 is a receptor-regulated SMAD (R-SMAD). May act as a tumor suppressor in colorectal carcinoma.,PTM:Acetylated on Lys-19 by coactivators in response to TGF-beta signaling, which increases transcriptional activity. Isoform short: Acetylation increases DNA binding activity in vitro and enhances its association with target promoters in vivo.,PTM:In response to TGF-beta, ubiquitinated by NEDD4L; which promotes its degradation.,PTM:Phosphorylated on one or several of Thr-220, Ser-245, Ser-250, and Ser-255. In response to TGF-beta, phosphorylated on Ser-465/467 by TGF-beta and activin type 1 receptor kinases. Able to interact with SMURF2 when phosphorylated on Ser-465/467, recruiting other proteins, such as SNON, for degr</p>
Subcellular Location :	Cytoplasm . Nucleus . Cytoplasmic and nuclear in the absence of TGF-beta. On TGF-beta stimulation, migrates to the nucleus when complexed with SMAD4 (PubMed:9865696, PubMed:21145499). 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). .

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

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