

Rabbit Smad2 Polyclonal Antibody | anti-Smad2 antibody

Phospho-Smad2 (Ser255) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA31390	Rabbit	Human, Mouse, Rat Predicted Reactivity: Zebrafish (89%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Xenopus (89%)	Western Blot, Immunohistochemistry, Immunofluorescence, Immunocytochemistry, ELISA

PRODUCT SYNONYMS

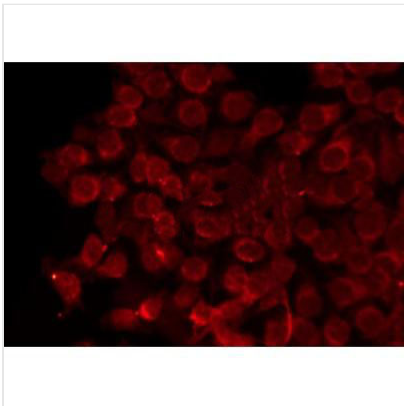
Smad2; Polyclonal Antibody; Phospho-Smad2 (Ser255) Antibody; Drosophila; homolog of; MADR2; hMAD-2; HsMAD2; JV18; JV18-1; JV181; MAD; MAD homolog 2; MAD Related Protein 2; Mad-related protein 2; MADH2; MGC22139; MGC34440; Mother against DPP homolog 2; Mothers against decapentaplegic homolog 2; Mothers against decapentaplegic; 2; Mothers against DPP homolog 2; OTTHUMP00000163489; Sma and Mad related protein 2; Sma- and Mad-related protein 2; MAD; SMAD 2; SMAD family member 2; SMAD; mothers against DPP homolog 2; SMAD2; SMAD2_HUMAN; anti-Smad2 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat Predicted Reactivity: Zebrafish (89%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Xenopus (89%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-Smad2 (Ser255) Antibody detects endogenous levels of Smad2 only when phosphorylated at Ser255. Tissue Specificity: Expressed at high levels in skeletal muscle, endothelial cells, heart and placenta.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-Smad2 antibody	WB (Western Blot), IHC (Immunohistochemistry), IF (Immunofluorescence), ICC (Immunocytochemistry), ELISA (Peptide ELISA)
Application Notes	WB: 1:1000-3000 IF/ICC: 1:100-1:500 IHC: 1:50-1:200 Peptide ELISA: 1:20,000-1:40,000
Immunogen	A synthesized peptide derived from human Smad2 around the phosphorylation site of Ser255.
Conjugation	Unconjugated
Fragment	Fab fragment

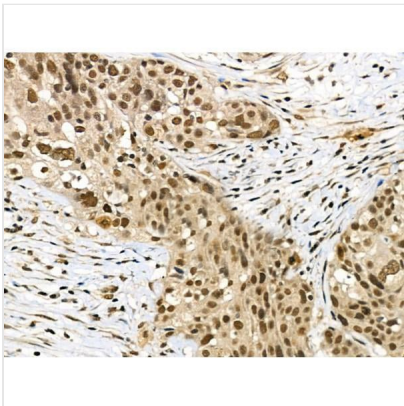
Post Translational Modifications	Phosphorylated on one or several of Thr-220, Ser-245, Ser-250, and Ser-255. In response to TGF-beta, phosphorylated on Ser-465/467 by TGF-beta and activin type 1 receptor kinases. TGF-beta-induced Ser-465/467 phosphorylation declines progressively in a KMT5A-dependent manner. Able to interact with SMURF2 when phosphorylated on Ser-465/467, recruiting other proteins, such as SNON, for degradation. In response to decorin, the naturally occurring inhibitor of TGF-beta signaling, phosphorylated on Ser-240 by CaMK2. Phosphorylated by MAPK3 upon EGF stimulation; which increases transcriptional activity and stability, and is blocked by calmodulin. Phosphorylated by PDPK1. In response to TGF-beta, ubiquitinated by NEDD4L; which promotes its degradation. Monoubiquitinated, leading to prevent DNA-binding (By similarity). Deubiquitination by USP15 alleviates inhibition and promotes activation of TGF-beta target genes. Ubiquitinated by RNF111, leading to its degradation: only SMAD2 proteins that are 'in use' are targeted by RNF111, RNF111 playing a key role in activating SMAD2 and regulating its turnover (By similarity). 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. Acetylation in the nucleus by EP300 is enhanced by TGF-beta.
Subunit Structure	Monomer; the absence of TGF-beta. Heterodimer; in the presence of TGF-beta. Forms a heterodimer with co-SMAD, SMAD4, in the nucleus to form the transactivation complex SMAD2/SMAD4. Interacts with AIP1, HGS, PML and WWP1 (By similarity). Interacts with NEDD4L in response to TGF-beta (By similarity). Found in a complex with SMAD3 and TRIM33 upon addition of TGF-beta. Interacts with ACVR1B, SMAD3 and TRIM33. Interacts (via the MH2 domain) with ZFYVE9; may form trimers with the SMAD4 co-SMAD. Interacts with FOXH1, homeobox protein TGIF, PEBP2-alpha subunit, CREB-binding protein (CBP), EP300, SKI and SNW1. Interacts with SNON; when phosphorylated at Ser-465/467. Interacts with SKOR1 and SKOR2. Interacts with PRDM16. Interacts (via MH2 domain) with LEMD3. Interacts with RBPMS. Interacts with WWP1. Interacts (dephosphorylated form, via the MH1 and MH2 domains) with RANBP3 (via its C-terminal R domain); the interaction results in the export of dephosphorylated SMAD3 out of the nucleus and termination of the TGF-beta signaling. Interacts with PDPK1 (via pHdomain). Interacts with DAB2; the interactions are enhanced upon TGF-beta stimulation. Interacts with USP15. Interacts with PPP5C. Interacts with ZNF580. Interacts with LDLRAD4 (via the SMAD interaction motif). Interacts (via MH2 domain) with PMEPA1 (via the SMAD interaction motif). Interacts with ZFHX3. Interacts with ZNF451. Identified in a complex that contains at least ZNF451, SMAD2, SMAD3 and SMAD4. Interacts weakly with ZNF8 (By similarity). Interacts (when phosphorylated) with RNF111; RNF111 acts as an enhancer of the transcriptional responses by mediating ubiquitination and degradation of SMAD2 inhibitors (By similarity).
Similarity	Belongs to the dwarfin/SMAD family.
Subcellular 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: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).
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



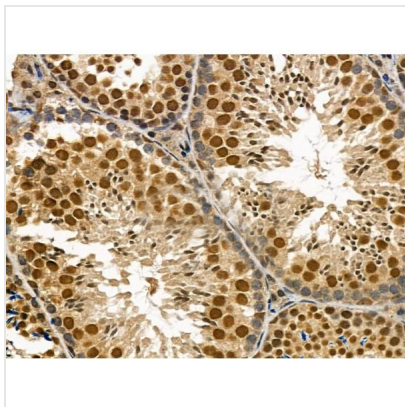
Application Data

At 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



IHC (Immunohistochemistry)

At 1/100 staining Human ovarian cancer by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



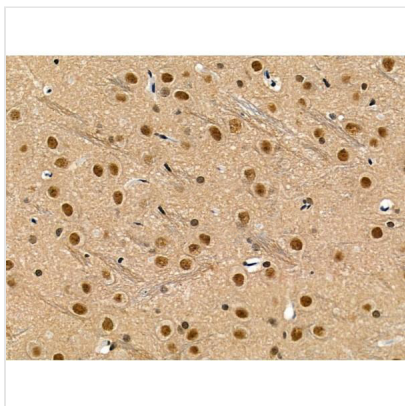
IHC (Immunohistochemistry)

At 1/100 staining Mouse testis tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



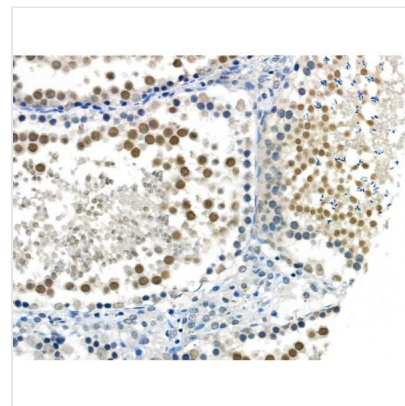
IHC (Immunohistochemistry)

At 1/100 staining Rat heart tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)

At 1/100 staining Rat brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemistry)

At 1/100 staining Rat testis tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-Smad2 antibody

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. May act as a tumor suppressor in colorectal carcinoma. Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator.

NCBI AND UNIPROT INFORMATION

NCBI GI #	51173730
NCBI GeneID	4087
NCBI Accession #	NP_001003652.1
NCBI GenBank Nucleotide #	NM_001003652.3
UniProt Accession #	Q15796
Molecular Weight	52,306 Da
NCBI Official Full Name	mothers against decapentaplegic homolog 2 isoform 1

NCBI Official Synonym Full Names	SMAD family member 2
NCBI Official Symbol	SMAD2
NCBI Official Synonym Symbols	JV18; MADH2; MADR2; JV18-1; hMAD-2; hSMAD2
NCBI Protein Information	mothers against decapentaplegic homolog 2; MAD homolog 2; mother against DPP homolog 2; Sma- and Mad-related protein 2; SMAD, mothers against DPP homolog 2
UniProt Protein Name	Mothers against decapentaplegic homolog 2
UniProt Gene Name	SMAD2
UniProt Synonym Gene Names	MADH2; MADR2; MAD homolog 2; Mothers against DPP homolog 2; hMAD-2; SMAD 2; Smad2; hSMAD2
UniProt Entry Name	SMAD2_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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 Online datasheet: <https://stage.aaabiotech.com/polyclonal/smad2-antibody-western-blot-immunohistochemistry-immunofluorescence-immunocytochemistry-peptide-elisa-elisa/31390>