



Smad2 (phospho Thr220) Polyclonal Antibody

Catalog No	YP-Ab-01437
Isotype	IgG
Reactivity	Human;Mouse;Rat
Applications	WB;IHC;IF;ELISA
Gene Name	SMAD2
Immunogen	The antiserum was produced against synthesized peptide derived from human Smad2 around the phosphorylation site of Thr220. AA range:186-235
Specificity	Phospho-Smad2 (T220) Polyclonal Antibody detects endogenous levels of Smad2 protein only when phosphorylated at T220.
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Source	Polyclonal, Rabbit,IgG
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Dilution	WB 1:500-2000,Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/10000, WB 1:500-2000
Concentration	1 mg/ml
Purity	≥90%
Storage Stability	-20°C/1 year
Synonyms	Smad2;Mothers against decapentaplegic homolog 2;MADH2;MADR2;MAD homolog 2;Mothers against DPP homolog 2;JV18-1;Mad-related protein 2;hMAD-2;SMAD family member 2;SMAD 2;hSMAD2
Observed Band	
Calculated Molecular Weight	
Cell Pathway	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). .
Tissue Specificity	Expressed at high levels in skeletal muscle, endothelial cells, heart and placenta.



Function

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

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

matters needing attention

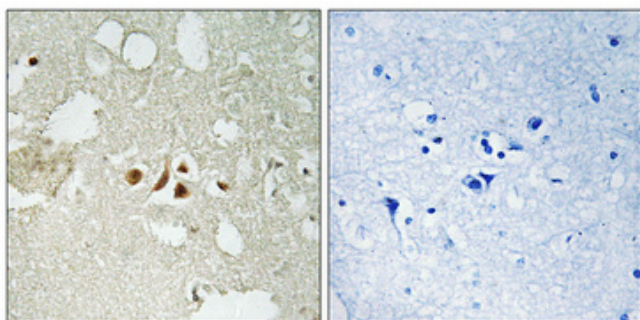
Avoid repeated freezing and thawing!

Usage suggestions

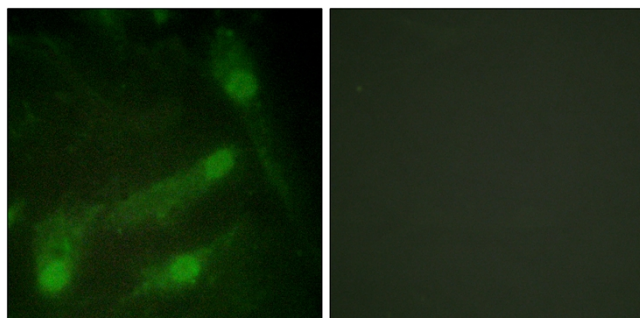
This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.



Products Images



Immunohistochemical analysis of paraffin-embedded Human brain. Antibody was diluted at 1:100(4° overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negative ctrl (right) obtained from antibody was pre-absorbed by immunogen peptide.



Immunofluorescence analysis of HeLa cells, using Smad2 (Phospho-Thr220) Antibody. The picture on the right is blocked with the phospho peptide.