abcam

Product datasheet

Anti-Smad2 antibody ab63576

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Overview

Product name	Anti-Smad2 antibody
Description	Rabbit polyclonal to Smad2
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, ICC/IF
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic non-phosphopeptide derived from human Smad2 around the phosphorylation site of serine 467 (C-S-S-M-S).
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol, 0.87% Sodium chloride
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee	Our **Abpromise guarantee** covers the use of ab63576 in the following tested applications.

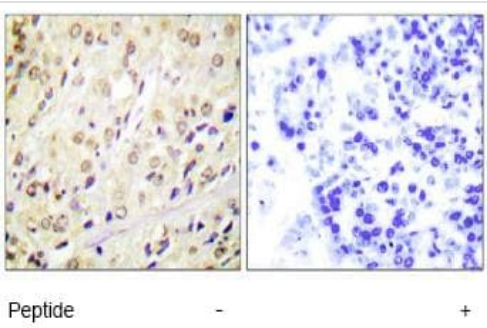
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	(2)	1/50 - 1/100.
ICC/IF	(1)	1/500 - 1/1000.

Target

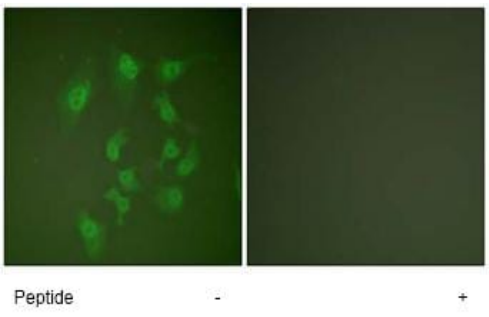
Function	Receptor-regulated SMAD (R-SMAD) that is an intracellular signal transducer and transcriptional modulator activated by TGF-beta (transforming growth factor) and activin type 1 receptor kinases. Binds the TRE element in the promoter region of many genes that are regulated by TGF-beta and, on formation of the SMAD2/SMAD4 complex, activates transcription. May act as a tumor suppressor in colorectal carcinoma.
Tissue specificity	Expressed at high levels in skeletal muscle, heart and placenta.
Sequence similarities	Belongs to the dwarfin/SMAD family. Contains 1 MH1 (MAD homology 1) domain. Contains 1 MH2 (MAD homology 2) domain.
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. 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. In response to TGF-beta, ubiquitinated by NEDD4L; which promotes its degradation. 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.
Cellular localization	Cytoplasm. Nucleus. Cytoplasmic and nuclear in the absence of TGF-beta. On TGF-beta stimulation, migrates to the nucleus when complexed with SMAD4. On dephosphorylation by phosphatase PPM1A, released from the SMAD2/SMAD4 complex, and exported out of the nucleus by interaction with RANBP1.

Images



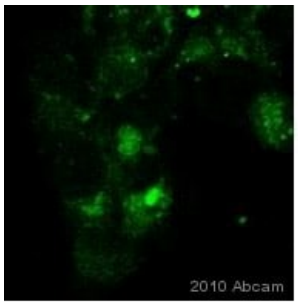
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad2 antibody (ab63576)

ab63576, at a 1/50 dilution, staining human Smad2 in prostate carcinoma, using Immunohistochemistry, Formalin/PFA fixed Paraffin embedded tissue, minus immunising peptide (left image) and plus immunising peptide (right image).



Immunocytochemistry/ Immunofluorescence - Anti-Smad2 antibody (ab63576)

Immunofluorescent staining of HepG2 cells, using ab63576 at a 1/500 dilution, minus immunising peptide (left image) and plus immunising peptide (right image).



Immunocytochemistry/ Immunofluorescence - Anti-Smad2 antibody (ab63576)

This image is courtesy of an anonymous Abreview

ab63576 staining Smad2 in Mouse enterocytes by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with 0.5% Triton and blocked with 5% BSA for 1 hour at 20°C. Samples were incubated with primary antibody (1/250) for 2 hours at 20°C. An Alexa Fluor®488-conjugated Goat anti-rabbit IgG polyclonal (1/1000) was used as the secondary antibody.

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