

ARG67314 anti-Smad 2 + Smad 3 antibody

Package: 100 µl, 50 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes Smad 2 + Smad 3
Tested Reactivity	Hu, Ms, Rat, Bov, Chk, Zfsh
Tested Application	IHC-P, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	Smad 2 + Smad 3
Species	Human
Immunogen	KLH-conjugated synthetic peptide within the N-term region of Human Smad 2 + Smad 3.
Conjugation	Un-conjugated
Alternate Names	SMAD family member 2; MADR2; MADH2; Mothers against decapentaplegic homolog 2; JV18; Smad2; hMAD-2; Mad-related protein 2; hSMAD2; Mothers against DPP homolog 2; JV18-1; MAD homolog 2; SMAD 2

Application Instructions

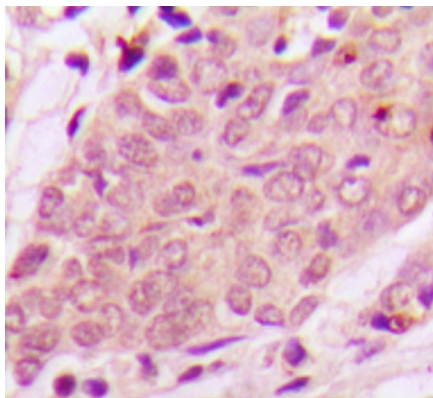
Application table	Application	Dilution
	IHC-P	1:100-1:200
	WB	1:500-1:1000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	
Observed Size	60 kDa	

Properties

Form	Liquid
Purification	Affinity purification with immunogen
Buffer	0.42% Potassium phosphate (pH 7.3), 0.87% NaCl, 0.01% Sodium azide and 30% Glycerol.
Preservative	0.01% Sodium azide
Stabilizer	30% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	SMAD2
Gene Full Name	SMAD family member 2
Background	<p>The protein encoded by this gene belongs to the SMAD, a family of proteins similar to the gene products of the <i>Drosophila</i> gene 'mothers against decapentaplegic' (Mad) and the <i>C. elegans</i> 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 have been observed for this gene. [provided by RefSeq, May 2012]</p>
Function	<p>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. [UniProt]</p>
Calculated Mw	<p>Smad 2: 52 kDa Smad 3: 48 kDa</p>
PTM	<p>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.</p> <p>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 (PubMed:21947082). 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).</p> <p>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. [UniProt]</p>
Cellular Localization	<p>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). [UniProt]</p>



ARG67314 anti-Smad 2 + Smad 3 antibody IHC-P image

Immunohistochemistry: Human breast cancer stained with ARG67314 anti-Smad 2 + Smad 3 antibody.



ARG67314 anti-Smad 2 + Smad 3 antibody WB image

Western blot: HeLa stained with ARG67314 anti-Smad 2 + Smad 3 antibody.



ARG67314 anti-Smad 2 + Smad 3 antibody WB image

Western blot: Mouse embryo stained with ARG67314 anti-Smad 2 + Smad 3 antibody.
