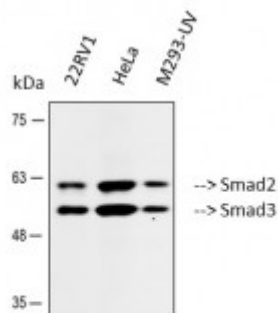


Anti-Smad2/3 antibody



Western Blot (WB) analysis of 1)22RV1, 2)HeLa, 3)M293-UV cell lysates using Smad2/3 antibody (STJ95697).



Description

Smad2/3 is a protein encoded by the SMAD2 gene which is approximately 52,3 kDa. Smad2/3 is localised to the cytoplasm and nucleus. It is involved in TGF-beta receptor signalling which activate SMADs, Th17 cell differentiation and human embryonic stem cell pluripotency. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signalling pathways. This protein mediates the signal of the 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 protein. Smad2/3 is expressed at high levels in skeletal muscle, endothelial cells, heart and placenta. Mutations in the SMAD2 gene may result in Ureteral disease. STJ95697 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of Smad2/3 protein.

Model	STJ95697
Host	Rabbit
Reactivity	Human, Mouse, Rat, Simian
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human Smad2/3 around the non-phosphorylation site of T8.
Immunogen Region	1-80 aa
Gene ID	4087
Gene Symbol	SMAD2

Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:10000
Specificity	Smad2/3 Polyclonal Antibody detects endogenous levels of Smad2/3 protein.
Tissue Specificity	Expressed at high levels in skeletal muscle, endothelial cells, heart and placenta.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Mothers against decapentaplegic homolog 2 MAD homolog 2 Mothers against DPP homolog 2 JV18-1 Mad-related protein 2 hMAD-2 SMAD family member 2 SMAD 2 Smad2 hSMAD2
Molecular Weight	48/60 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6768 OMIM:601366
Alternative Names	Mothers against decapentaplegic homolog 2 MAD homolog 2 Mothers against DPP homolog 2 JV18-1 Mad-related protein 2 hMAD-2 SMAD family member 2 SMAD 2 Smad2 hSMAD2
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. Positively regulates PDPK1 kinase activity by stimulating its dissociation from the 14-3-3 protein YWHAQ which acts as a negative regulator.
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 .
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 . 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 . 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.