

SMAD2 Antibody (T220) Blocking Peptide
Synthetic peptide
Catalog # BP7365b**Specification****SMAD2 Antibody (T220) Blocking Peptide -
Product Information**Primary Accession [Q15796](#)**SMAD2 Antibody (T220) Blocking Peptide -
Additional Information****Gene ID** 4087**Other 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, SMAD2, MADH2, MADR2

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP7365b](#) was selected from the T220 region of human SMAD2. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

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Protein Information****SMAD2 Antibody (T220) Blocking Peptide -
Background**

The protein belongs to the SMAD, a family of proteins similar to the proteins 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 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.

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References**

Funaba, M., J. Biol. Chem. 277 (44), 41361-41368 (2002) Wicks, S.J., Mol. Cell. Biol. 20 (21), 8103-8111 (2000)

Name SMAD2

Synonyms MADH2, MADR2

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 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, 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)
{ECO:0000250|UniProtKB:Q62432,
ECO:0000269|PubMed:16751101,
ECO:0000269|PubMed:19289081,
ECO:0000269|PubMed:21145499,
ECO:0000269|PubMed:9865696}

Tissue Location

Expressed at high levels in skeletal muscle, endothelial cells, heart and placenta.

SMAD2 Antibody (T220) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)