10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-SMAD4 (RABBIT) Antibody
SMAD4 Antibody
Catalog # ASR5411

Specification

Anti-SMAD4 (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human, Mouse, Xenopus**
Clonality	**Polyclonal**
Application	**WB, E, I, LCI**
Application Note	**This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 60 kDa in size corresponding to SMAD4 protein by western blotting in the appropriate cell lysate or extract.**
Physical State	**Liquid (sterile filtered)**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to a region near the carboxy terminus of human SMAD4 protein.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-SMAD4 (RABBIT) Antibody - Additional Information

Gene ID 4089

Other Names
4089

Purity
This affinity purified antibody is directed against human SMAD4 protein. The product was affinity purified from monospecific antiserum by immunoaffinity chromatography. A BLAST analysis was used to suggest cross-reactivity with SMAD4 protein from human, mouse and Xenopus based on 100% homology with the immunizing sequence. Reactivity against homologues from other sources is not known.

Storage Condition
Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-SMAD4 (RABBIT) Antibody - Protein Information

Name SMAD4

Synonyms DPC4, MADH4

Function
In muscle physiology, plays a central role in the balance between atrophy and hypertrophy. When recruited by MSTN, promotes atrophy response via phosphorylated SMAD2/4. MSTN decrease causes SMAD4 release and subsequent recruitment by the BMP pathway to promote hypertrophy via phosphorylated SMAD1/5/8. Acts synergistically with SMAD1 and YY1 in bone morphogenetic protein (BMP)-mediated cardiac- specific gene expression. Binds to SMAD binding elements (SBEs) (5'- GTCT/AGAC-3') within BMP response element (BMPRE) of cardiac activating regions (By similarity). Common SMAD (co-SMAD) is the coactivator and mediator of signal transduction by TGF-beta (transforming growth factor). Component of the heterotrimeric SMAD2/SMAD3-SMAD4 complex that forms in the nucleus and is required for the TGF-mediated signaling (PubMed:25514493). Promotes binding of the SMAD2/SMAD4/FAST-1 complex to DNA and provides an activation function required for SMAD1 or SMAD2 to stimulate transcription. Component of the multimeric SMAD3/SMAD4/JUN/FOS complex which forms at the AP1 promoter site; required for synergistic transcriptional activity in response to TGF- beta. May act as a tumor suppressor. 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 in the absence of ligand. Migrates to the nucleus when complexed with R-SMAD (PubMed:15799969). PDPK1 prevents its nuclear translocation in response to TGF-beta (PubMed:17327236)

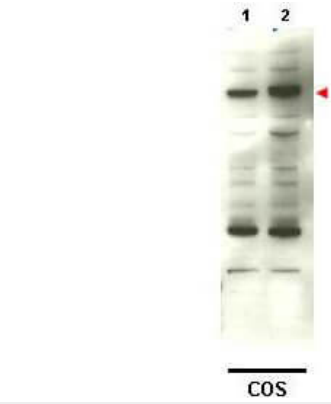
Anti-SMAD4 (RABBIT) Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-SMAD4 (RABBIT) Antibody - Images

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



Western blot using Rockland's affinity purified anti-SMAD4 to detect over-expressed SMAD4 in transfected COS cells (lane 2). Lane 1 contains lysate from mock transfected COS cells. A doublet band is seen in the SMAD4 transfected lysate with the upper band (arrowhead) representing SMAD4 and the lower band being non-specific staining. The membrane was probed with the primary antibody at a 1:1,000 dilution. Personal Communication Kathleen Flanders, CCR-NCI, Bethesda, MD.

Anti-SMAD4 (RABBIT) Antibody - Background

This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. SMAD4 (also known as Mothers against decapentaplegic homolog 4, Mothers against DPP homolog 4, deletion target in pancreatic carcinoma 4 and hSMAD4) is a common mediator of signal transduction by TGF-b (transforming growth factor), but is also involved in cancer development and metastases as a tumor suppressor. SMAD4 promotes binding of the SMAD2/SMAD4/FAST-1 complex to DNA and provides an activation function required for SMAD1 or SMAD2 to stimulate transcription. SMAD4 may form trimers with receptor-regulated SMAD (R-SMAD) and interacts with ATF2, COPS5, DACH1, MSG1, SKI and TRIM33. In the absence of ligand SMAD4 is found in the cytoplasm, but when complexed with R-SMAD, translocates to the nucleus. Defects in SMAD4 are a cause of pancreatic carcinoma and juvenile polyposis syndrome (JPS), a syndrome in which patients are at risk for developing gastrointestinal cancers.