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Anti-SMAD1 pS206 (RABBIT) Antibody

SMAD1 phospho S206 Antibody
Catalog # ASR5469

Specification

Anti-SMAD1 pS206 (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human**
Clonality	**Polyclonal**
Application	**WB, E, I, LCI**
Application Note	**This affinity purified antibody has been tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 52 kDa in size corresponding to phosphorylated SMAD1 protein by western blotting in the appropriate stimulated tissue or cell lysate or extract. This antibody is specific for the phosphorylated pS206 of SMAD1. Stimulation of EGF, TGFbeta BMP2, and 0.5M NaCl are recommended for 1 hour.**
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 phosphorylated synthetic peptide corresponding to the region of amino acids containing serine 206 of human SMAD1 protein.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-SMAD1 pS206 (RABBIT) Antibody - Additional Information

Gene ID 4086

Other Names
4086

Purity
This affinity-purified antibody is directed against the phosphorylated form of human SMAD1 protein at the pS206 residue. The product was affinity purified from monospecific antiserum by immunoaffinity purification. Antiserum was first purified against the phosphorylated form of the immunizing peptide. The resultant affinity purified antibody was then cross adsorbed against the non-phosphorylated form of the immunizing peptide. Reactivity occurs against human SMAD1 pS206 protein and the antibody is specific for the phosphorylated form of the protein. Reactivity

with non-phosphorylated human SMAD1 is minimal by ELISA and western blot. A BLAST analysis was used to suggest 100% cross reactivity with SMAD1 from human, Duckbill platypus, Drosophila, mouse, opossum, chimpanzee, bonobo, orangutan, gorilla, macaque, cattle, sheep, pig, rat, horse, salmon, chicken, and dog based on the sequence homology with the immunogen. 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-SMAD1 pS206 (RABBIT) Antibody - Protein Information

Name SMAD1

Synonyms BSP1, MADH1, MADR1

Function
Transcriptional modulator that plays a role in various cellular processes, including embryonic development, cell differentiation, and tissue homeostasis (PubMed:9335504). Upon BMP ligand binding to their receptors at the cell surface, is phosphorylated by activated type I BMP receptors (BMPRIs) and associates with SMAD4 to form a heteromeric complex which translocates into the nucleus acting as transcription factor (PubMed:33667543). In turn, the hetero-trimeric complex recognizes cis-regulatory elements containing Smad Binding Elements (SBEs) to modulate the outcome of the signaling network (PubMed:33667543). SMAD1/OAZ1/PSMB4 complex mediates the degradation of the CREBBP/EP300 repressor SNIP1. Positively regulates BMP4-induced expression of odontogenic development regulator MSX1 following IPO7-mediated nuclear import (By similarity).

Cellular Location
Cytoplasm. Nucleus Note=Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with SMAD4 (PubMed:15647271). Co-localizes with LEMD3 at the nucleus inner membrane (PubMed:15647271). Exported from the nucleus to the cytoplasm when dephosphorylated (By similarity) {ECO:0000250|UniProtKB:P70340, ECO:0000269|PubMed:15647271}

Tissue Location
Ubiquitous. Highest expression seen in the heart and skeletal muscle

Anti-SMAD1 pS206 (RABBIT) Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot

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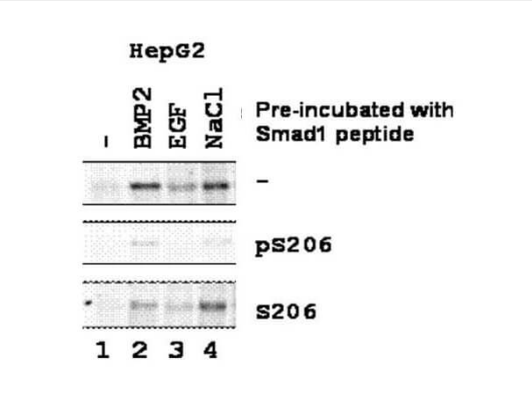
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-SMAD1 pS206 (RABBIT) Antibody - Images



Western blot using Rockland's Affinity Purified anti-SMAD1 pS206 antibody shows detection of endogenous phosphorylated SMAD1 in whole cell lysates from human hepatoma (HEPG2, lanes 1-4) derived cell lines treated with PBS, BMP2 (5 ng/mL), EGF (1 ng/mL), or NaCl for 1 h at 37°C before harvest. Each lane contains approximately 15 µg of lysate. Primary antibody was used at a 1:500 dilution in 1% BLOTTO (p/n B501-0500) and reacted for 1 hour at room temperature. Primary antibody was pre-incubated before reacting with blot as follows: top row - with PBS, middle row - with the immunizing phosphorylated peptide and bottom row - with control or non-phosphorylated peptide. The membrane was washed and reacted with a 1:3,000 dilution HRP-conjugated a-Rabbit IgG (p/n 611-103-122) for 1 hour at room temperature. Detection was by ECL. Personal communication, Xin-Hua Feng, Baylor College of Medicine, Houston, TX.

Anti-SMAD1 pS206 (RABBIT) Antibody - Background

SMAD1 is also known Mothers Against Decapentaplegic homolog 1, Mothers against DPP homolog 1, hSMAD-3, JV4-1, Transforming growth factor-Beta-Signaling Protein 1 or BSP1. SMAD proteins are signal transducers and transcriptional modulators that mediate multiple signaling pathways. SMAD1, as a transcriptional modulator, is activated by BMP (Bone Morphogenetic Protein) type 1 receptor kinase (it is a receptor-regulated SMAD or R-SMAD). BMPs are involved in a range of biological activities including cell growth, apoptosis, morphogenesis, development and immune responses. SMAD proteins have been implicated as downstream effectors of TGF beta/BMP signaling. In response to BMP ligands, SMAD1 can be phosphorylated (other sites besides the most prominent of S206, are S187, S195, and S214). S-206 is phosphorylated by ERK in response to mitogenic growth factors, or by recombinant ERK in vitro; this can be tested by treating cells with EGF or in cancer cells where Ras is activated. The phosphorylated form of this protein forms a complex with SMAD4, which is important for its function in the transcription regulation. This protein is also a target for SMAD-specific E3 ubiquitin ligases, such as SMURF1 and SMURF2, and undergoes ubiquitination and proteasome-mediated degradation.