

Anti-SMAD1 Antibody

Catalog Number: A00728-2

About SMAD1

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.

Overview

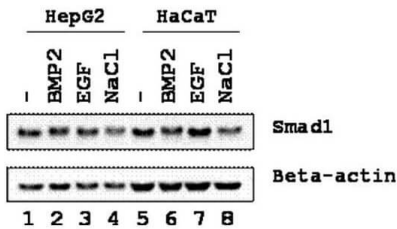
Product Name	Anti-SMAD1 Antibody
Reactive Species	Human
Description	Boster Bio Anti-SMAD1 Antibody (Catalog # A00728-2). Tested in ELISA, WB applications. This antibody reacts with Human.
Application	ELISA, IP, WB
Clonality	Polyclonal
Formulation	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2, 0.01% (w/v) Sodium Azide
Storage Instructions	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. Expiration date is one (1) year from date of opening. (Ship on dry ice.)
Host	Rabbit
Uniprot ID	Q15797

Technical Details

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.
Predicted Reactive Species	Chimpanzee

Isotype	IgG
Form	Liquid (sterile filtered)
Concentration	1.31 mg/mL by UV absorbance at 280 nm
Purification	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.
Suggested Dilutions	<p>ELISA: 1:25,000 - 1:30,000 IP: 2 ug WB: 1:500</p> <p>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. This antibody is useful in ChIP and ChIPSeq.</p>

Anti-SMAD1 Antibody (A00728-2) Images



Western blot using Boster's Affinity Purified anti-SMAD1 antibody shows detection of endogenous SMAD1 in whole cell lysates from human hepatoma (HEPG2, lanes 1-4) and keratinocyte (HaCaT, lanes 5-8) derived cell lines treated with PBS, BMP2, EGF, 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 and reacted for 1 hour at room temperature. Anti-beta actin staining was used as a loading control. The membrane was washed and reacted with a 1:3,000 dilution HRP-conjugated a-Rabbit IgG for 1 hour at room temperature. Detection was by ECL. Personal communication, Xin-Hua Feng, Baylor College of Medicine, Houston, TX

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Anti-SMAD1 Antibody

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