abcam

ab53745

Anti-Smad1 antibody [913C1b]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.05% Sodium azide Constituents: 1% BSA, 0.812% Sodium chloride, 0.1312% Sodium phosphate, 0.1136% Disodium hydrogenorthophosphate, 0.03% Tripotassium orthophosphate, 0.0225% Potassium chloride, 0.0204% Potassium phosphate monobasic
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human SMAD1. The exact immunogen used to generate this antibody is proprietary information. Database link Q15797
Clone number	913C1b
Purification technique	Affinity purification Protein G
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Target data

See full target information SMAD1

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	Up to 12 months
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Smad1 also known as Mothers against decapentaplegic homolog 1 (MADH1) is a protein encoded by the SMAD1 gene in humans. It has a molecular mass of approximately 53 kDa and functions as a receptor-regulated Smad protein. Smad1 primarily transmits signals from the bone morphogenetic proteins (BMPs) a group of growth factors and cytokines. Expression of Smad1 occurs in various tissues including the lung heart and kidney. It plays an important role in mediating signaling pathways within different cellular environments.
Biological function summary	Smad1 participates in the transmission of BMP signals from the cell surface to the nucleus ensuring transcriptional regulation of target genes. In the presence of BMPs Smad1 forms complexes with Smad4 upon activation. These Smad complexes then translocate to the nucleus where they regulate gene expression. Smad1 influences cellular responses such as proliferation differentiation and apoptosis. In particular it plays a significant role in bone development and osteogenesis.
Pathways	Smad1 plays an important role within the BMP signaling pathway which is important for early development and tissue homeostasis. Within this pathway BMPs trigger the phosphorylation of Smad1 which then associates with Smad4 to propagate downstream signaling. Another associated pathway includes the TGF-beta signaling pathway where Smads like Smad2 and Smad3 show functional similarities and differences with Smad1. The interactions of Smad1 with related proteins like Smad4 highlight its significant contribution to cellular processes regulated by these pathways.
Associated diseases and disorders	Smad1 associates with various pathological conditions. For instance aberrant Smad1 signaling has implications in cancer particularly in processes like tumor progression and metastasis. Disruptions in the BMP pathway involving Smad1 and Smad4 can influence the onset and development of disorders such as pulmonary hypertension where inappropriate cell growth and remodeling occur. Understanding Smad1's role in these contexts provides insights into potential therapeutic avenues for treatment and management of these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

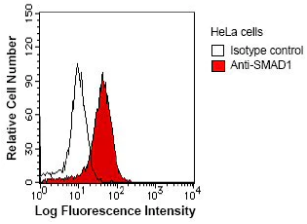
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

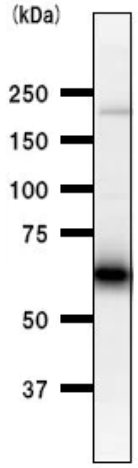
4 product images



Flow Cytometry - Anti-Smad1 antibody [913C1b] (ab53745)

Smad1 Flow Cytometry staining using mouse Anti-Smad1 antibody

Using 0.5µg Anti-SMAD1 antibody (ab53745) and 0.25µg Goat anti-Mouse secondary.



Western blot - Anti-Smad1 antibody [913C1b] (ab53745)

All lanes:
Western blot - Anti-Smad1 antibody [913C1b] (ab53745) at 1/50 dilution

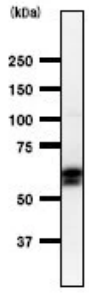
All lanes:
NIH3T3 whole cell lysate at 25 µg

Secondary

All lanes:
Mouse IgG at 1/2500 dilution

Predicted band size: 52 kDa

Observed band size: 62 kDa



Western blot - Anti-Smad1 antibody [913C1b] (ab53745)

All lanes:
Western blot - Anti-Smad1 antibody [913C1b] (ab53745) at 1/50 dilution

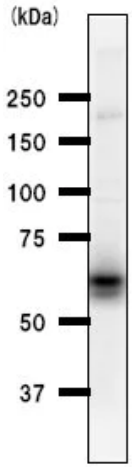
All lanes:
HEK293 whole cell lysate at 25 µg

Secondary

All lanes:
Mouse IgG antibody at 1/2500 dilution

Predicted band size: 52 kDa

Observed band size: 60 kDa



Western blot - Anti-Smad1 antibody [913C1b] (ab53745)

All lanes:
Western blot - Anti-Smad1 antibody [913C1b] (ab53745) at 1/50 dilution

All lanes:
F2408 whole cell lysate at 25 µg

Secondary

All lanes:
Mouse IgG at 1/2500 dilution

Predicted band size: 52 kDa

Observed band size: 62 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.