



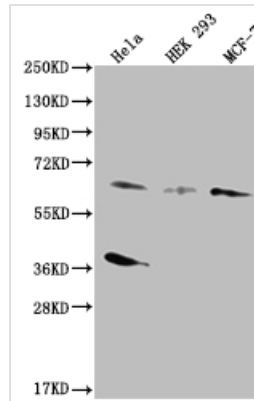
SMAD4 Recombinant Monoclonal Antibody

Product Code	CSB-RA551397A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q13485
Immunogen	A synthesized peptide derived from human SMAD4
Species Reactivity	Human
Tested Applications	ELISA, WB; Recommended dilution: WB:1:500-1:2000
Relevance	<p>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. {ECO:0000250, ECO:0000269 PubMed:17327236, ECO:0000269 PubMed:25514493, ECO:0000269 PubMed:9389648}.</p>
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Cancer; Cardiovascular; Metabolism; Signal transduction; Stem cells
Gene Names	SMAD4



Clone No. 22H12

Image



Western Blot

Positive WB detected in: HeLa whole cell lysate, HEK293 whole cell lysate, MCF-7 whole cell lysate

All lanes: SMAD4 antibody at 1:500

Secondary

Goat polyclonal to rabbit IgG at 1/50000 dilution

Predicted band size: 61 kDa

Observed band size: 55-72 kDa

Description

Creating the SMAD4 recombinant monoclonal antibody is a multistep process that involves harvesting and sequencing the SMAD4 monoclonal antibody gene, constructing a SMAD4 monoclonal antibody gene-carrying vector, transfecting it into a host cell line for culture. The synthesized peptide from human SMAD4 is used as an immunogen during SMAD4 monoclonal antibody production. The resulting SMAD4 recombinant monoclonal antibody is purified using affinity chromatography and subjected to ELISA and WB applications to determine its specificity.

SMAD4 protein is a transcription factor that plays a critical role in the TGF-beta signaling pathway. It is involved in the regulation of cell growth, differentiation, apoptosis, and tissue homeostasis. SMAD4 functions as a downstream mediator of TGF-beta signaling, translocating into the nucleus upon activation of the TGF-beta receptor complex and binding to target gene promoters to regulate their transcription. SMAD4 also interacts with other signaling pathways, including BMP, Wnt, and Notch, to regulate various cellular processes. Dysregulation of SMAD4 has been linked to the development and progression of various cancers, including pancreatic, colorectal, and gastric cancer.