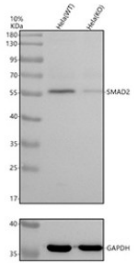
SMAD2 Monoclonal Antibody ACI-19 / MADR2 Rabbit Monoclonal Antibody [clone ACI-19] (FY13695)

Catalog No.	Formulation	Size
FY13695	Rabbit IgG in stabilizing components, phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol	100 ul

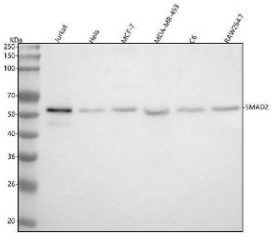
Recombinant RABBIT MONOCLONAL

Bulk quote request

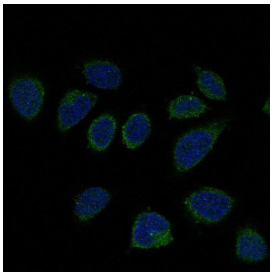
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	ACI-19
Purity	Affinity purified
UniProt	Q15796
Applications	Western blot: 1:500 Immunofluorescence: 1:50
Limitations	This SMAD2 Monoclonal Antibody ACI-19 / MADR2 Rabbit Monoclonal Antibody is available for research use only.



SMAD2 Monoclonal Antibody ACI-19 WB Analysis of HeLa Wild-Type and SMAD2 Knockout Cells. Western blot analysis of human HeLa wild-type and SMAD2 knockout cell lysates using MADR2 Rabbit Monoclonal Antibody clone ACI-19. An immunoreactive band at approximately 52 kDa is detected in wild-type cells, with substantially reduced signal in the knockout sample, supporting SMAD2-specific recognition.



SMAD2 Monoclonal Antibody ACI-19 WB Analysis of Human, Rat and Mouse Cell Lysates. Western blot analysis of multiple human, rat, and mouse cell lysates using MADR2 Rabbit Monoclonal Antibody clone ACI-19. An immunoreactive band is detected at approximately 52 kDa, consistent with the expected molecular weight of SMAD2.



SMAD2 Monoclonal Antibody ACI-19 IF Staining of HeLa Cells. Immunofluorescence analysis of human HeLa cells using MADR2 Rabbit Monoclonal Antibody clone ACI-19. SMAD2 immunoreactivity is detected in the cells, consistent with its role as an intracellular mediator of TGF-beta signaling.

Description

SMAD2 Monoclonal Antibody ACI-19 / MADR2 Rabbit Monoclonal Antibody targets SMAD2, a receptor-regulated transcriptional mediator that plays a central role in transforming growth factor-beta (TGF-beta) and activin signaling. Also known as MADR2, MADH2, and JV18-1, SMAD2 belongs to the SMAD family of intracellular signaling proteins. These proteins transmit signals from activated cell surface serine/threonine kinase receptors to the nucleus, where they regulate gene expression. SMAD2 participates in pathways controlling cell proliferation, differentiation, embryonic development, tissue homeostasis, and responses to extracellular growth factors.

SMAD2 contains two conserved domains, MH1 and MH2, separated by a regulatory linker region. The MH2 domain mediates interactions with activated receptors and other signaling proteins, while the MH1 domain contributes to regulatory interactions and nuclear functions. Following ligand binding, activated TGF-beta or activin receptors phosphorylate SMAD2 at conserved serine residues within its C-terminal SSXS motif. Phosphorylated SMAD2 associates with SMAD4 to form transcriptional regulatory complexes that accumulate in the nucleus. Unlike SMAD3, SMAD2 contains an insertion within its MH1 domain that limits direct DNA binding, making its transcriptional activity particularly dependent on interactions with DNA-binding cofactors.

SMAD2 signaling is regulated through phosphorylation, protein-protein interactions, intracellular trafficking, and targeted degradation. Inhibitory SMAD proteins and phosphatases help control the duration and intensity of receptor-mediated signaling. Additional phosphorylation events within the linker region can influence SMAD2 stability, localization, and transcriptional activity. Through interactions with transcription factors and chromatin-associated regulators, SMAD2 contributes to context-dependent gene expression programs involved in epithelial differentiation, extracellular matrix production, immune regulation, and cellular responses to tissue injury.

Altered SMAD2 signaling has been implicated in cancer, fibrosis, and developmental abnormalities. Depending on cellular context, TGF-beta/SMAD2 signaling can suppress proliferation or contribute to epithelial-mesenchymal transition, invasion, and tissue remodeling. SMAD2 also participates in developmental signaling pathways that establish tissue organization and cell fate. Its activity is closely coordinated with SMAD3 and SMAD4, although these proteins have distinct regulatory properties and transcriptional functions. SMAD2 Monoclonal Antibody ACI-19 supports investigation of SMAD2 expression and its involvement in TGF-beta signaling, transcriptional regulation, and disease-associated cellular responses.

Explore our SMAD2 Antibody for additional research into TGF-beta signaling, transcriptional regulation, and cell proliferation, with Western blot validation using HeLa wild-type and SMAD2 knockout cell lysates.

Application Notes

Optimal dilution of the SMAD2 Monoclonal Antibody ACI-19 / MADR2 Rabbit Monoclonal Antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Mothers Against Decapentaplegic Homolog 2 was used as the immunogen for the SMAD2 Monoclonal Antibody ACI-19.

Storage

The SMAD2 Monoclonal Antibody ACI-19 can be stored at -20oC.

Alternate Names

MADR2 antibody, MADH2 antibody, JV18-1 antibody, hSMAD2 antibody, hMAD-2 antibody, Mothers against decapentaplegic homolog 2 antibody, Mothers against DPP homolog 2 antibody, MAD homolog 2 antibody, SMAD family member 2 antibody, SMAD2 protein antibody, SMAD2/3 signaling mediator antibody, TGF-beta signaling mediator antibody, Receptor-regulated SMAD2 antibody

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