

# Smad4 (SPM448): sc-56479

## BACKGROUND

Smad proteins, the mammalian homologs of the *Drosophila* Mothers against dpp (Mad) have been implicated as downstream effectors of TGF $\beta$ /BMP signaling. Smad1 (also designated Madr1 or JV4-1), Smad5 and mammalian Smad8 (also designated Smad9 or MADH6) are effectors of BMP2 and BMP4 function while Smad2 (also designated Madr2 or JV18-1) and Smad3 are involved in TGF $\beta$  and activin-mediated growth modulation. Smad4 (also designated DPC4) has been shown to mediate all of the above activities through interaction with various Smad family members. Smad6 and Smad7 regulate the response to activin/TGF $\beta$  signaling by interfering with TGF $\beta$ -mediated phosphorylation of other Smad family members.

## REFERENCES

1. Liu, F., et al. 1996. A human Mad protein acting as a BMP-regulated transcriptional activator. *Nature* 381: 620-623.
2. Zhang, Y., et al. 1996. Receptor-associated Mad homologues synergize as effectors of the TGF $\beta$  response. *Nature* 383: 168-172.
3. Lagna, G., et al. 1996. Partnership between DPC4 and Smad proteins in TGF $\beta$  signalling pathways. *Nature* 383: 832-836.
4. Eppert, K., et al. 1996. Madr2 maps to 18q21 and encodes a TGF $\beta$ -regulated Mad-related protein that is functionally mutated in colorectal carcinoma. *Cell* 86: 543-552.

## CHROMOSOMAL LOCATION

Genetic locus: SMAD4 (human) mapping to 18q21.2; Smad4 (mouse) mapping to 18 E2.

## SOURCE

Smad4 (SPM448) is a mouse monoclonal antibody raised against purified recombinant DPC4 protein of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Smad4 (SPM448) is recommended for detection of Smad4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Smad4 siRNA (h): sc-29484, Smad4 siRNA (m): sc-29485, Smad4 shRNA Plasmid (h): sc-29484-SH, Smad4 shRNA Plasmid (m): sc-29485-SH, Smad4 shRNA (h) Lentiviral Particles: sc-29484-V, Smad4 shRNA (m) Lentiviral Particles: sc-29485-V.

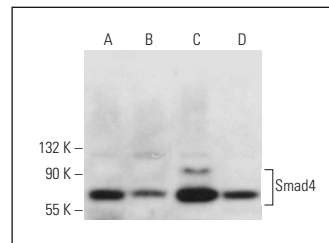
Molecular Weight of Smad4: 61 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, Ramos cell lysate: sc-2216 or NIH/3T3 whole cell lysate: sc-2210.

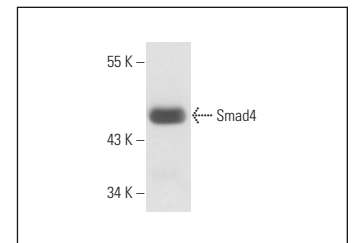
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Smad4 (SPM448): sc-56479. Western blot analysis of Smad4 expression in NIH/3T3 (A), RAW 264.7 (B), IMR-32 (C) and HeLa (D) whole cell lysates.



Smad4 (SPM448): sc-56479. Western blot analysis of Smad4 expression in Ramos whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Xu, T., et al. 2011. Bone morphogenetic protein-4-induced epithelial-mesenchymal transition and invasiveness through Smad1-mediated signal pathway in squamous cell carcinoma of the head and neck. *Arch. Med. Res.* 42: 128-137.
2. Wang, Y., et al. 2013. MicroRNA-224 targets SMAD family member 4 to promote cell proliferation and negatively influence patient survival. *PLoS ONE* 8: e68744.
3. Oh, J.H., et al. 2020. Antiphotaging effect of 3,5-dicaffeoyl-epi-quinic acid against UVA-induced skin damage by protecting human dermal fibroblasts *in vitro*. *Int. J. Mol. Sci.* 21: 7756.

## STORAGE

Store at 4 $^{\circ}$  C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **Smad4 (B-8): sc-7966** for Smad4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.