SANTA CRUZ BIOTECHNOLOGY, INC.

Smad4 (0.N.557): sc-73040

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Smad proteins, the mammalian homologs of the *Drosophila* Mothers against dpp (Mad) have been implicated as downstream effectors of TGFβ/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 TGFβ 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/TGFβ signaling by interfering with TGFβ-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 TGFβ response. Nature 383: 168-172.
3. Lagna, G., et al. 1996. Partnership between DPC4 and Smad proteins in TGFβ signalling pathways. Nature 383: 832-836.

CHROMOSOMAL LOCATION

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

SOURCE

Smad4 (0.N.557) is a mouse monoclonal antibody raised against recombinant Smad4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

Smad4 (0.N.557) 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 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (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 and Smad4 shRNA (m) Lentiviral Particles: sc-29485-V.

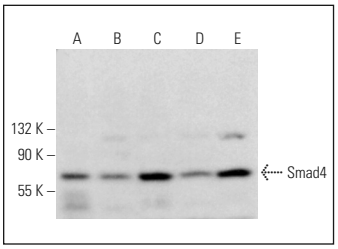
Molecular Weight of Smad4: 61 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or A-431 whole cell lysate: sc-2201.

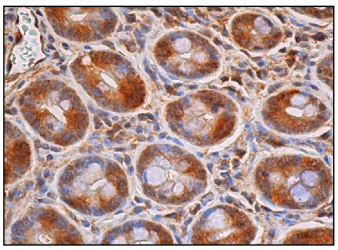
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Smad4 (0.N.557): sc-73040. Western blot analysis of Smad4 expression in Jurkat (**A**), A-431 (**B**), NIH/3T3 (**C**), RAW 264.7 (**D**) and TK-1 (**E**) whole cell lysates.



Smad4 (0.N.557): sc-73040. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic and nuclear staining of glandular cells and cytoplasmic staining of endothelial cells.

SELECT PRODUCT CITATIONS

1. Kang, T.H., et al. 2006. Neuroprotective effects of the cyanidin-3-O-β-d-glucopyranoside isolated from mulberry fruit against cerebral ischemia. Neurosci. Lett. 391: 122-126.
2. He, J.T., et al. 2012. Neuroprotective effects of exogenous activin A on oxygen-glucose deprivation in PC-12 cells. Molecules 17: 315-327.
3. Shi, C.K., et al. 2019. Therapeutic effect of interleukin-10 in keloid fibroblasts by suppression of TGF-β/Smad pathway. Eur. Rev. Med. Pharmacol. Sci. 23: 9085-9092.
4. Chen, L., et al. 2020. Mild microwave ablation combined with Hsp90 and TGF-β1 inhibitors enhances the therapeutic effect on osteosarcoma. Mol. Med. Rep. E-published.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

CONJUGATES

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