SANTA CRUZ BIOTECHNOLOGY, INC.

Smad7 (Z8-B): sc-101152

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.

CHROMOSOMAL LOCATION

Genetic locus: SMAD7 (human) mapping to 18q21.1; Smad7 (mouse) mapping to 18 E3.

SOURCE

Smad7 (Z8-B) is a mouse monoclonal antibody raised against recombinant Smad7 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Smad7 (Z8-B) is recommended for detection of Smad7 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Smad7 siRNA (h): sc-36508, Smad7 siRNA (m): sc-36509, Smad7 shRNA Plasmid (h): sc-36508-SH, Smad7 shRNA Plasmid (m): sc-36509-SH, Smad7 shRNA (h) Lentiviral Particles: sc-36508-V and Smad7 shRNA (m) Lentiviral Particles: sc-36509-V.

Molecular Weight of Smad7: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or A549 cell lysate: sc-2413.

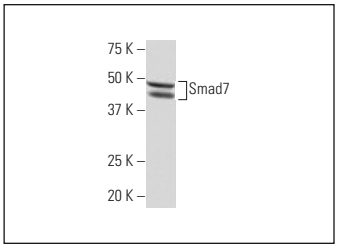
STORAGE

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

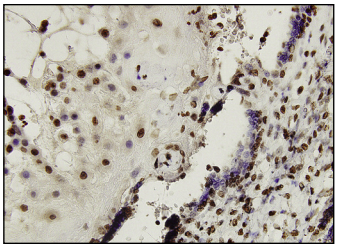
RESEARCH USE

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

DATA



Smad7 (Z8-B): sc-101152. Western blot analysis of Smad7 expression in HeLa whole cell lysate.



Smad7 (Z8-B): sc-101152. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Yuan, S.M., et al. 2011. Transforming growth factor-β in graft vessels: histology and immunohistochemistry. Clinics 66: 895-901.
2. Walsh, S.B., et al. 2011. Cyclosporine a mediates pathogenesis of aggressive cutaneous squamous cell carcinoma by augmenting epithelial-mesenchymal transition: role of TGFβ signaling pathway. Mol. Carcinog. 50: 516-527.
3. Zhang, Y., et al. 2014. Expression of BAMBI and its combination with Smad7 correlates with tumor invasion and poor prognosis in gastric cancer. Tumour Biol. 35: 7047-7056.
4. Zhuang, L.K., et al. 2016. MicroRNA-92b promotes hepatocellular carcinoma progression by targeting Smad7 and is mediated by long non-coding RNA XIST. Cell Death Dis. 7: e2203.
5. Feng, T., et al. 2017. Hepatocyte-specific Smad7 deletion accelerates DEN-induced HCC via activation of STAT3 signaling in mice. Oncogenesis 6: e294.
6. Mahmood, M.Q., et al. 2017. Transforming growth factor (TGF) β1 and Smad signalling pathways: A likely key to EMT-associated COPD pathogenesis. Respirology 22: 133-140.
7. Gupta, S., et al. 2017. Targeted AAV5-Smad7 gene therapy inhibits corneal scarring *in vivo*. PLoS ONE 12: e0172928.
8. Siegert, A.M., et al. 2018. Altered TGF-β endocytic trafficking contributes to the increased signaling in Marfan syndrome. Biochim. Biophys. Acta 1864: 554-562.
9. Klausen, P., et al. 2018. SMAD4 protein expression is downregulated in ileal epithelial cells from patients with Crohn's disease with significant inverse correlation to disease activity. Gastroenterol. Res. Pract. 2018: 9307848.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.