

# Smad2 (YZ-13): sc-101153

## BACKGROUND

Smad proteins, the mammalian homologs of the *Drosophila* mothers against decapentaplegic (Mad), have been implicated as downstream effectors of TGF $\beta$ /BMP signaling. Smad1 (also designated Madr1 or JV4-1) and Smad5 are effectors of BMP-2 and BMP-4 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 proteins.

## CHROMOSOMAL LOCATION

Genetic locus: SMAD2 (human) mapping to 18q21.1; Smad2 (mouse) mapping to 18 E3.

## SOURCE

Smad2 (YZ-13) is a mouse monoclonal antibody raised against recombinant Smad2 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Smad2 (YZ-13) is recommended for detection of Smad2 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)], 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 Smad2 siRNA (h): sc-38374, Smad2 siRNA (m): sc-38375, Smad2 siRNA (r): sc-77325, Smad2 shRNA Plasmid (h): sc-38374-SH, Smad2 shRNA Plasmid (m): sc-38375-SH, Smad2 shRNA Plasmid (r): sc-77325-SH, Smad2 shRNA (h) Lentiviral Particles: sc-38374-V, Smad2 shRNA (m) Lentiviral Particles: sc-38375-V and Smad2 shRNA (r) Lentiviral Particles: sc-77325-V.

Molecular Weight of Smad2: 55-60 kDa.

Positive Controls: Smad2 (m): 293T Lysate: sc-123638, K-562 whole cell lysate: sc-2203 or HeLa nuclear extract: sc-2120.

## STORAGE

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

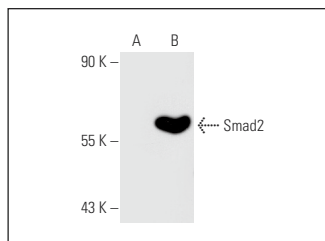
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

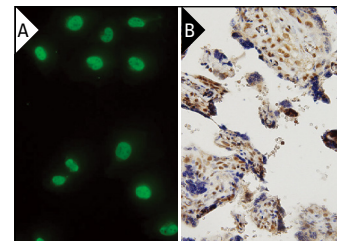
## RESEARCH USE

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

## DATA



Smad2 (YZ-13): sc-101153. Western blot analysis of Smad2 expression in non-transfected: sc-117752 (A) and mouse Smad2 transfected: sc-123638 (B) 293T whole cell lysates.



Smad2 (YZ-13): sc-101153. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic localization (B).

## SELECT PRODUCT CITATIONS

1. Fukunishi, N., et al. 2010. Induction of  $\Delta$ Np63 by the newly identified keratinocyte-specific transforming growth factor  $\beta$  signaling pathway with Smad2 and I $\kappa$ B kinase  $\alpha$  in squamous cell carcinoma. *Neoplasia* 12: 969-979.
2. Wang, X., et al. 2013. Effects of TRAP-1-like protein (TLP) gene on collagen synthesis induced by TGF- $\beta$ /Smad signaling in human dermal fibroblasts. *PLoS ONE* 8: e55899.
3. Han, Y.Y., et al. 2015. Involvement of epithelial-to-mesenchymal transition and associated transforming growth factor- $\beta$ /Smad signaling in paraquat-induced pulmonary fibrosis. *Mol. Med. Rep.* 12: 7979-7984.
4. Nishio, M., et al. 2016. Dysregulated YAP1/TAZ and TGF- $\beta$  signaling mediate hepatocarcinogenesis in Mob1a/1b-deficient mice. *Proc. Natl. Acad. Sci. USA* 113: E71-E80.
5. Shi, S., et al. 2017. HPIP silencing inhibits TGF- $\beta$ 1-induced EMT in lung cancer cells. *Int. J. Mol. Med.* 39: 479-483.
6. Tang, D., et al. 2018. Galectin-1 expression in activated pancreatic satellite cells promotes fibrosis in chronic pancreatitis/pancreatic cancer via the TGF- $\beta$ 1/Smad pathway. *Oncol. Rep.* 39: 1347-1355.
7. He, H., et al. 2019. Vascular progenitor cell senescence in patients with Marfan syndrome. *J. Cell. Mol. Med.* 23: 4139-4152.
8. Chen, H., et al. 2020. TGF- $\beta$ 1/IL-11/MEK/ERK signaling mediates senescence-associated pulmonary fibrosis in a stress-induced premature senescence model of Bmi-1 deficiency. *Exp. Mol. Med.* 52: 130-151.
9. Park, D.S., et al. 2020. Wip1 regulates Smad4 phosphorylation and inhibits TGF- $\beta$  signaling. *EMBO Rep.* 21: e48693.



See **Smad2/3 (C-8): sc-133098** for Smad2/3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.