

p-Smad3 (1D9): sc-517575

BACKGROUND

Smad proteins, the mammalian homologs of the *Drosophila* Mothers against dpp (Mad) have been implicated as downstream effectors of TGF β /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 β 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 β signaling by interfering with TGF β -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. Eppert, K., et al. 1996. MADR2 maps to 18q21 and encodes a TGF β -regulated Mad-related protein that is functionally encoded in colorectal carcinoma. *Cell* 86: 543-552.
3. Zhang, Y., et al. 1996. Receptor-associated Mad homologues synergize as effectors of the TGF- β response. *Nature* 383: 168-172.

CHROMOSOMAL LOCATION

Genetic locus: SMAD3 (human) mapping to 15q22.33; Smad3 (mouse) mapping to 9 C.

SOURCE

p-Smad3 (1D9) is a mouse monoclonal antibody raised against Ser 425 phosphorylated Smad3 of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 1% glycerol and < 0.1% stabilizer protein.

APPLICATIONS

p-Smad3 (1D9) is recommended for detection of Ser 425 phosphorylated Smad3 of mouse, rat and human origin by 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 Smad3 siRNA (h): sc-38376, Smad3 siRNA (m): sc-38377, Smad3 siRNA (r): sc-77326, Smad3 shRNA Plasmid (h): sc-38376-SH, Smad3 shRNA Plasmid (m): sc-38377-SH, Smad3 shRNA Plasmid (r): sc-77326-SH, Smad3 shRNA (h) Lentiviral Particles: sc-38376-V, Smad3 shRNA (m) Lentiviral Particles: sc-38377-V and Smad3 shRNA (r) Lentiviral Particles: sc-77326-V.

Molecular Weight of p-Smad3: 54 kDa.

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.

SELECT PRODUCT CITATIONS

1. Lou, Z., et al. 2018. Role of ALK5/Smad2/3 signaling in the regulation of NOX expression in cerebral ischemia/reperfusion injury. *Exp. Ther. Med.* 16: 1671-1678.
2. Ning, J., et al. 2018. MicroRNA-326 inhibits endometrial fibrosis by regulating TGF- β 1/Smad3 pathway in intrauterine adhesions. *Mol. Med. Rep.* 18: 2286-2292.
3. Zhang, J., et al. 2019. Cardiomyocyte-specific loss of RMP causes myocardial dysfunction and heart failure. *Cardiovasc. Res.* 115: 1617-1628.
4. Shao, S., et al. 2020. Lysyl hydroxylase 3 increases collagen deposition and promotes pulmonary fibrosis by activating TGF- β 1/Smad3 and Wnt/ β -catenin pathways. *Arch. Med. Sci.* 16: 436-445.
5. Gong, Z., et al. 2020. Nuclear FOXP3 inhibits tumor growth and induced apoptosis in hepatocellular carcinoma by targeting c-Myc. *Oncogenesis* 9: 97.
6. Yang, F. and Richardson, D.W. 2021. Comparative analysis of tenogenic gene expression in tenocyte-derived induced pluripotent stem cells and bone marrow-derived mesenchymal stem cells in response to biochemical and biomechanical stimuli. *Stem Cells Int.* 2021: 8835576.
7. Li, L., et al. 2021. MicroRNA-29b inhibits human vascular smooth muscle cell proliferation via targeting the TGF- β /Smad3 signaling pathway. *Exp. Ther. Med.* 21: 492.
8. Lim, W.W., et al. 2021. Antibody-mediated neutralization of IL11 signalling reduces ERK activation and cardiac fibrosis in a mouse model of severe pressure overload. *Clin. Exp. Pharmacol. Physiol.* 48: 605-613.
9. Albadrani, G.M., et al. 2021. Quercetin prevents myocardial infarction adverse remodeling in rats by attenuating TGF- β 1/Smad3 signaling: different mechanisms of action. *Saudi J. Biol. Sci.* 28: 2772-2782.
10. Chen, Y., et al. 2021. Exposure to 16 Hz pulsed electromagnetic fields protect the structural integrity of primary cilia and associated TGF- β signaling in osteoprogenitor cells harmed by cigarette smoke. *Int. J. Mol. Sci.* 22: 7036.
11. Shen, X., et al. 2021. Inhibition of postn rescues myogenesis defects in myotonic dystrophy type 1 myoblast model. *Front. Cell Dev. Biol.* 9: 710112.
12. Liu, Z., et al. 2021. DNCP induces the differentiation of induced pluripotent stem cells into odontoblasts by activating the Smad/p-Smad and p38/p-p38 signaling pathways. *Exp. Ther. Med.* 22: 1361.
13. Amirrad, F., et al. 2021. Arrhythmogenic hearts in PKD2 mutant mice are characterized by cardiac fibrosis, systolic, and diastolic dysfunctions. *Front. Cardiovasc. Med.* 8: 772961.

PROTOCOLS

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