SANTA CRUZ BIOTECHNOLOGY, INC.

Smad1 (A-4): sc-7965

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.

CHROMOSOMAL LOCATION

Genetic locus: SMAD1 (human) mapping to 4q31.21; Smad1 (mouse) mapping to 8 C2.

SOURCE

Smad1 (A-4) is a mouse monoclonal antibody raised against amino acids 1-465 respresnting full length of Smad1 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-7965 X, 200 µg/0.1 ml.

Smad1 (A-4) is available conjugated to agarose (sc-7965 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-7965 PE), fluorescein (sc-7965 FITC), Alexa Fluor® 488 (sc-7965 AF488), Alexa Fluor® 546 (sc-7965 AF546), Alexa Fluor® 594 (sc-7965 AF594) or Alexa Fluor® 647 (sc-7965 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7965 AF680) or Alexa Fluor® 790 (sc-7965 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Smad1 (A-4) is recommended for detection of Smad1 of mouse, rat, human and mink 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 Smad1 siRNA (h): sc-29483, Smad1 siRNA (m): sc-36507, Smad1 siRNA (r): sc-63289, Smad1 shRNA Plasmid (h): sc-29483-SH, Smad1 shRNA Plasmid (m): sc-36507-SH, Smad1 shRNA Plasmid (r): sc-63289-SH, Smad1 shRNA (h) Lentiviral Particles: sc-29483-V, Smad1 shRNA (m) Lentiviral Particles: sc-36507-V and Smad1 shRNA (r) Lentiviral Particles: sc-63289-V.

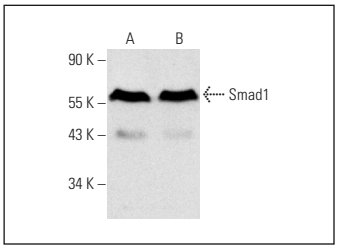
Smad1 (A-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Smad1: 52-56 kDa.

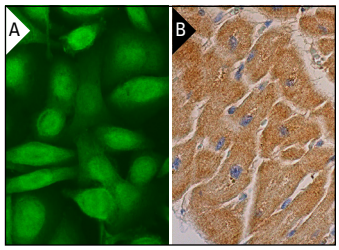
STORAGE

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

DATA



Smad1 (A-4): sc-7965. Western blot analysis of Smad1 expression in NIH/3T3 (**A**) and Mv 1 Lu (**B**) whole cell lysates.



Smad1 (A-4) Alexa Fluor® 488: sc-7965 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and cytoplasmic localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). Smad1 (A-4): sc-7965. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Piek, E., et al. 1999. TGF-β type I receptor/ALK-5 and Smad proteins mediate epithelial to mesenchymal transdifferentiation in NMuMG breast epithelial cells. J. Cell Sci. 112: 4557-4568.
2. Oujo, B., et al. 2014. L-endoglin overexpression increases renal fibrosis after unilateral ureteral obstruction. PLoS ONE 9: e110365.
3. Go, J.H. 2015. Smad1 expression in follicular lymphoma. J. Pathol. Transl. Med. 49: 243-248.
4. Zhang, M., et al. 2016. Icariin regulates systemic iron metabolism by increasing hepatic hepcidin expression through Stat3 and Smad1/5/8 signaling. Int. J. Mol. Med. 37: 1379-1388.
5. Lin, H., et al. 2017. T-cell immunoglobulin mucin-3 as a potential inducer of the epithelial-mesenchymal transition in hepatocellular carcinoma. Oncol. Lett. 14: 5899-5905.
6. Liu, X., et al. 2018. BMP2/Smad signaling pathway is involved in the inhibition function of fibroblast growth factor 21 on vascular calcification. Biochem. Biophys. Res. Commun. 503: 930-937.
7. Ge, M., et al. 2019. miR-29a/b1 inhibits hair follicle stem cell lineage progression by spatiotemporally suppressing Wnt and BMP signaling. Cell Rep. 29: 2489-2504.e4.
8. Park, D.S., et al. 2020. Wip1 regulates Smad4 phosphorylation and inhibits TGF-β signaling. EMBO Rep. 21: e48693.

RESEARCH USE

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