SANTA CRUZ BIOTECHNOLOGY, INC.

Smurf1 (H-60): sc-25510

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The Power to Question

BACKGROUND

Smurf1 and Smurf2 (SMAD ubiquitination regulatory factor-1 and 2) are members of the Hect family of proteins, which also includes the ubiquitin (Ub) E3-type ligases Nedd3 and E6-AP. E3 ligases are involved in the enzymatic reactions of the Ub conjugating pathway, which targets proteins for degradation by the 26S proteasome. Within the Ub pathway, the E3 ligases specifically catalyze the transfer of Ub from the Ub-conjugating enzymes to the individual protein substrate. As an E3 ligase, Smurf1 selectively interacts with receptor-regulated SMADs specific to the BMP pathway in order to trigger their ubiquitination and degradation. Smurf2 interacts with receptor-activated Smads (R-Smads), including Smad1, Smad2, and Smad3, but not Smad4. Although Smurf2 localizes to the nucleus, binding to Smad7 induces its export and its recruitment to the activated TGFβ receptor, where it causes degradation of Smad7.

CHROMOSOMAL LOCATION

Genetic locus: SMURF1 (human) mapping to 7q22.1; Smurf1 (mouse) mapping to 5 G2.

SOURCE

Smurf1 (H-60) is a rabbit polyclonal antibody raised against amino acids 176-235 of Smurf1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-25510 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Smurf1 (H-60) is recommended for detection of Smurf1 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Smurf1 (H-60) is also recommended for detection of Smurf1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Smurf1 siRNA (h): sc-41673, Smurf1 siRNA (m): sc-41674, Smurf1 shRNA Plasmid (h): sc-41673-SH, Smurf1 shRNA Plasmid (m): sc-41674-SH, Smurf1 shRNA (h) Lentiviral Particles: sc-41673-V and Smurf1 shRNA (m) Lentiviral Particles: sc-41674-V.

Molecular Weight of Smurf1: 86 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or mouse kidney extract: sc-2255.

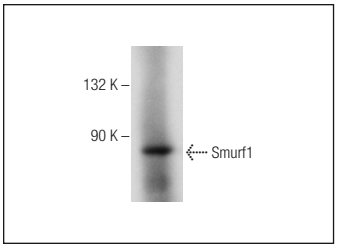
STORAGE

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



Smurf1 (H-60): sc-25510. Western blot analysis of Smurf1 expression in mouse kidney tissue extract.

SELECT PRODUCT CITATIONS

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2. Lu, K., et al. 2008. Targeting WW domains linker of HECT-type ubiquitin ligase Smurf1 for activation by CKIP-1. Nat. Cell Biol. 10: 994-1002.
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4. Li, S., et al. 2010. Ubiquitin ligase Smurf1 targets TRAF family proteins for ubiquitination and degradation. Mol. Cell. Biochem. 338: 11-17.
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6. Chiang, T.A., et al. 2010. Hyperosmolarity enhanced susceptibility to renal tubular fibrosis by modulating catabolism of type I transforming growth factor-β receptors. J. Cell. Biochem. 109: 663-671.
7. Andrews, P.S., et al. 2010. Identification of substrates of SMURF1 ubiquitin ligase activity utilizing protein microarrays. Assay Drug Dev. Technol. 8: 471-487.
8. Zhang, Y., et al. 2012. Functional screening for miRNAs targeting Smad4 identified miR-199a as a negative regulator of TGF-β signalling pathway. Nucleic Acids Res. 40: 9286-9297.
9. Izrailit, J., et al. 2013. High throughput kinase inhibitor screens reveal TRB3 and MAPK-ERK/TGFβ pathways as fundamental Notch regulators in breast cancer. Proc. Natl. Acad. Sci. USA 110: 1714-1719.