SANTA CRUZ BIOTECHNOLOGY, INC.

SARA (H-300): sc-9135

BACKGROUND

SARA (NSP, SARA, MADHIP, SMADIP, ZFYVE9, zinc finger FYVE domain containing 9) is a double zinc finger (FYVE domain) protein that influences the recruitment of Smad proteins to the TGF-β receptor and ensures appropriate subcellular localization of the activated receptor-bound complex. The FYVE domain in SARA directs localization to early endosomal compartments where it can interact with TGF-β receptors and Smads. Promyelocytic leukemia (PML) tumour suppressor physically interacts with Smad2/3 and SARA and promotes association and accumulation of SARA and TGF-β receptor in early endosome. SARA can enhance recruitment of protein phosphatase 1 catalytic subunit (PP1c) to Smad7-GADD34 complex by controlling the specific subcellular localization of PP1c. Dephosphorylation of TGF-β receptor by Smad7 is an effective mechanism for governing negative feedback in TGF-β signaling.

REFERENCES

1. Heldin, C.H., et al. 1997. TGFβ signalling from cell membrane to nucleus through Smad proteins. Nature 390: 465-471.
2. Nakao, A., et al. 1997. TGFβ receptor-mediated signalling through Smad2, Smad3 and Smad4. EMBO J. 16: 5353-5362.
3. Derynck, R., et al. 1998. Smads: transcriptional activators of TGFβ responses. Cell 95: 737-740.
4. Tsukazaki, T., et al. 1998. SARA, a FYVE domain protein that recruits Smad2 to the TGFβ receptor. Cell 95: 779-791.

CHROMOSOMAL LOCATION

Genetic locus: ZFYVE9 (human) mapping to 1p32.3.

SOURCE

SARA (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 of SARA 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.

APPLICATIONS

SARA (H-300) is recommended for detection of SARA of 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).

Suitable for use as control antibody for SARA siRNA (h): sc-36458, SARA shRNA Plasmid (h): sc-36458-SH and SARA shRNA (h) Lentiviral Particles: sc-36458-V.

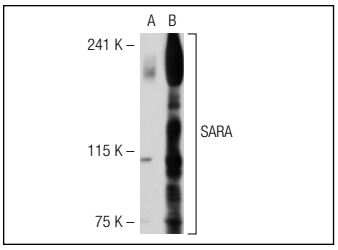
Molecular Weight of SARA: 180 kDa.

Positive Controls: SARA (h): 293T Lysate: sc-115327, Caki-1 cell lysate: sc-2224 or HeLa whole cell lysate: sc-2200.

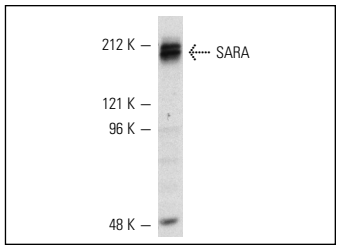
STORAGE

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

DATA



SARA (H-300): sc-9135. Western blot analysis of SARA expression in non-transfected: sc-117752 (**A**) and human SARA transfected: sc-115327 (**B**) 293T whole cell lysates.



SARA (H-300): sc-9135. Western blot analysis of SARA expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Hayes, S., et al. 2002. TGF β receptor internalization into EEA1-enriched early endosomes: role in signaling to Smad2. J. Cell Biol. 158: 1239-1249.
2. Kunzmann, S., et al. 2003. SARA and Hgs attenuate susceptibility to TGFβ1-mediated T cell suppression. FASEB J. 17: 194-202.
3. Runyan, C.E., et al. 2005. The role of internalization in transforming growth factor β1-induced Smad2 association with Smad anchor for receptor activation (SARA) and Smad2-dependent signaling in human mesangial cells. J. Biol. Chem. 280: 8300-8308.
4. Qiao, L., et al. 2006. SIRT1 regulates adiponectin gene expression through FOXO1-C/enhancer-binding protein α transcriptional complex. J. Biol. Chem. 281: 39915-39924.
5. Ho, J., et al. 2007. Novel dominant negative Smad antagonists to TGFβ signaling. Cell. Signal. 19: 1565-1574.
6. Gillette, J.M., et al. 2009. Intercellular transfer to signalling endosomes regulates an *ex vivo* bone marrow niche. Nat. Cell Biol. 11: 303-311.
7. Kovacs, D., et al. 2010. Role of fibroblast-derived growth factors in regulating hyperpigmentation of solar lentigo. Br. J. Dermatol. 163: 1020-1027.

RESEARCH USE

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

PROTOCOLS

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