SANTA CRUZ BIOTECHNOLOGY, INC.

SARA (N-20): sc-8881

BACKGROUND

Upon activation of the transforming growth factor β (TGFβ) type II membrane receptor (TGFβ RII), SARA (for Smad anchor for receptor activation) associates with the plasma membrane and thereby mediates the recruitment and interaction of several essential components in the TGFβ signaling pathway. Membrane localized SARA is able to bind to cytosolic Smad2 and Smad3. This association enables the phosphorylation of Smad2 by the TGFβ receptor kinase, which results in Smad2 translocating to the nucleus and subsequently activating DNA transcription. SARA contains a distinct FYVE domain, which is frequently observed in proteins that associate with the membrane phospholipid phosphatidylinositol-3-phosphate. This domain is essential for directing the subcellular localization of both SARA and Smad2.

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.
5. ten Dijke, P. and Heldin, C.H. 1999. Signal transduction. An anchor for activation. Nature 397: 109-111.

CHROMOSOMAL LOCATION

Genetic locus: ZFYVE9 (human) mapping to 1p32.3; Zftve9 (mouse) mapping to 4 C7.

SOURCE

SARA (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus 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.

Blocking peptide available for competition studies, sc-8881 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

PROTOCOLS

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

APPLICATIONS

SARA (N-20) 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).

SARA (N-20) is also recommended for detection of SARA in additional species, including bovine.

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.

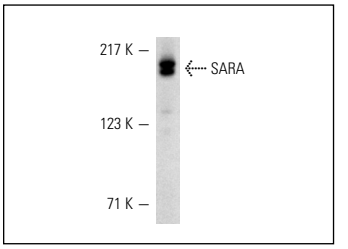
Molecular Weight of SARA: 180 kDa.

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

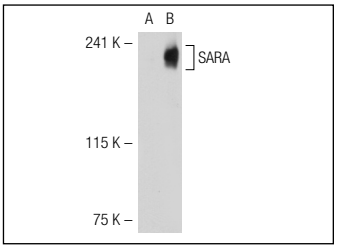
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



SARA (N-20): sc-8881. Western blot analysis of SARA expression in HeLa whole cell lysate.



SARA (N-20): sc-8881. Western blot analysis of SARA expression in non-transfected: sc-117752 (**A**) and human SARA transfected: sc-115327 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Di Guglielmo, G., et al. 2003. Distinct endocytic pathways regulate TGFβ receptor signalling and turnover. Nat. Cell Biol. 5: 410-421.
2. 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.