SANTA CRUZ BIOTECHNOLOGY, INC.

TRAP-1 (H-350): sc-9134

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Transforming growth factor β (TGFβ) receptor associated binding protein (TRAP-1) participates in the regulation of the TGFβ signaling pathway. TGFβ is a secreted ligand that induces transcription of various targeted genes involved in cell proliferation, differentiation and apoptosis by sequentially binding to surface TGFβ type II receptors and inducing the autophosphoryl-ation of the type II receptor and the transient transactivation of the type I TGFβ receptor. The signal is then propagated through the SMAD family of transcription factors, which leads to the expression of the targeted genes. The cytosolic TRAP-1 protein selectively associates with the phosphorylated type I TGFβ receptors, but not with the unphosphorylated type I receptors or type II receptors. TRAP-1 binding to the receptor results in the inhibition of TGFβ signaling, thereby inhibiting the transcription of TGFβ target genes. The carboxy terminus of TRAP-1 is also able to bind to 5-lipoxygenase, a mediator of lipid metabolism for the production of leukotrienes, where it may then regulate the signaling within leukocytes and other inflammatory mediating cells.

REFERENCES

1. Wrana, J.L., Attisano, L., Wieser, R., Ventura, F. and Massague, J. 1994. Mechanism of activation of the TGF-β receptor. Nature 370: 341-347.
2. Heldin, C.H., Miyazono, K. and ten Dijke, P. 1997. TGF-β signalling from cell membrane to nucleus through SMAD proteins. Nature 390: 465-471.
3. Nakao, A., Imamura, T., Souchelnytskyi, S., Kawabata, M., Ishisaki, A., Oeda, E., Tamaki, K., Hanai, J., Heldin, C.H., Miyazono, K. and ten Dijke, P. 1997. TGF-β receptor-mediated signalling through SMAD2, SMAD3 and SMAD4. EMBO J. 16: 5353-5362.
4. Charng, M.J., Zhang, D., Kinnunen, P. and Schneider, M.D. 1998. A novel protein distinguishes between quiescent and activated forms of the type I transforming growth factor β receptor. J. Biol. Chem. 273: 9365-9368.
5. Datta, P.K., Chytil, A., Gorska, A.E. and Moses, H.L. 1998. Identification of STRAP, a novel WD domain protein in transforming growth factor-signaling. J. Biol. Chem. 273: 34671-34674.
6. Provost, P., Samuelsson, B. and Radmark, O. 1999. Interaction of 5-lipoxygenase with cellular proteins. Proc. Natl. Acad. Sci. USA 96: 1881-1885.

CHROMOSOMAL LOCATION

Genetic locus: TGFBRAP1 (human) mapping to 2q12.1; Tgfbrap1 (mouse) mapping to 1 B.

SOURCE

TRAP-1 (H-350) is a rabbit polyclonal antibody raised against amino acids 510-860 mapping at the C-terminus of TRAP-1 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.

RESEARCH USE

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

APPLICATIONS

TRAP-1 (H-350) is recommended for detection of TRAP-1 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).

Suitable for use as control antibody for TRAP-1 siRNA (h): sc-36720, TRAP-1 siRNA (m): sc-36721, TRAP-1 shRNA Plasmid (h): sc-36720-SH, TRAP-1 shRNA Plasmid (m): sc-36721-SH, TRAP-1 shRNA (h) Lentiviral Particles: sc-36720-V and TRAP-1 shRNA (m) Lentiviral Particles: sc-36721-V.

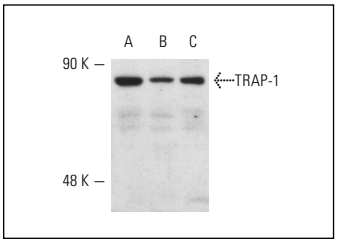
Molecular Weight of TRAP-1: 80 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Hep G2 cell lysate: sc-2227 or A-673 cell lysate: sc-2414.

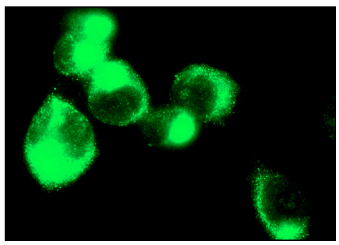
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



TRAP-1 (H-350): sc-9134. Western blot analysis of TRAP-1 expression in Hep G2 (**A**), A-673 (**B**) and MIA PaCa-2 (**C**) whole cell lysates.



TRAP-1 (H-350): sc-9134. Immunofluorescence staining of methanol-fixed MIA PaCa-2 cells showing cytoplasmic localization.

STORAGE

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