SANTA CRUZ BIOTECHNOLOGY, INC.

SNARK (H-128): sc-292034

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. SNARK (Snf1/AMP kinase-related kinase), also known as NUAK2 (NUAK family, Snf1-like kinase, 2), is s 628 amino acid protein that contains one protein kinase domain and belongs to the Ser/Thr protein kinase family. Using magnesium as a cofactor, SNARK catalyzes the ATP-dependent phosphorylation of target proteins and is involved in regulating cell tolerance to stress-induced glucose starvation. Additionally, SNARK is thought to induce cell-cell detachment and may protect cells from Fap-1-mediated apoptosis, possibly playing a role in the motility and invasiveness of tumor cells.

REFERENCES

1. Lefebvre, D.L., et al. 2001. Identification and characterization of a novel sucrose-non-fermenting protein kinase/AMP-activated protein kinase-related protein kinase, SNARK. Biochem. J. 355: 297-305.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608131. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Suzuki, A., et al. 2003. Induction of cell-cell detachment during glucose starvation through F-Actin conversion by SNARK, the fourth member of the AMP-activated protein kinase catalytic subunit family. Biochem. Biophys. Res. Commun. 311: 156-161.
4. Suzuki, A., et al. 2003. Identification of a novel protein kinase mediating Akt survival signaling to the ATM protein. J. Biol. Chem. 278: 48-53.
5. Lizcano, J.M., et al. 2004. LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1. EMBO J. 23: 833-843.
6. Legembre, P., et al. 2004. Identification of Snf1/AMP kinase-related kinase as an NFκB-regulated anti-apoptotic kinase involved in CD95-induced motility and invasiveness. J. Biol. Chem. 279: 46742-46747.
7. Kusakai, G., et al. 2004. Strong association of ARK5 with tumor invasion and metastasis. J. Exp. Clin. Cancer Res. 23: 263-268.
8. Yamamoto, H., et al. 2008. Identification of a novel substrate for TNFα-induced kinase NUAK2. Biochem. Biophys. Res. Commun. 365: 541-547.

CHROMOSOMAL LOCATION

Genetic locus: NUAK2 (human) mapping to 1q32.1; Nuak2 (mouse) mapping to 1 E4.

SOURCE

SNARK (H-128) is a rabbit polyclonal antibody raised against amino acids 501-628 mapping at the C-terminus of SNARK 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

SNARK (H-128) is recommended for detection of SNARK 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 SNARK siRNA (h): sc-88608, SNARK siRNA (m): sc-153652, SNARK shRNA Plasmid (h): sc-88608-SH, SNARK shRNA Plasmid (m): sc-153652-SH, SNARK shRNA (h) Lentiviral Particles: sc-88608-V and SNARK shRNA (m) Lentiviral Particles: sc-153652-V.

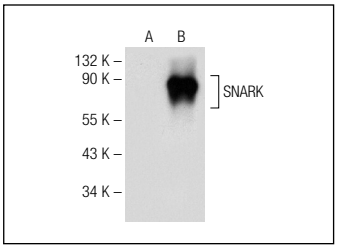
Molecular Weight of SNARK: 74 kDa.

Positive Controls: SNARK (h): 293T Lysate: sc-129802, A-673 cell lysate: sc-2414 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 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



SNARK (H-128): sc-292034. Western blot analysis of SNARK expression in non-transfected: sc-117752 (**A**) and human SNARK transfected: sc-129802 (**B**) 293T whole cell lysates.

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.