

SNARK (H-3): sc-374500

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 a 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

- 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.
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- 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.
- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

SNARK (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 559-591 near the C-terminus of SNARK of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374500 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SNARK (H-3) is recommended for detection of SNARK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

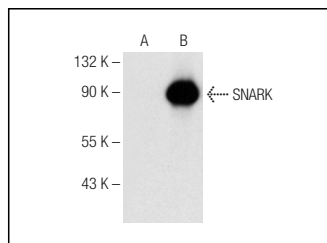
Molecular Weight of SNARK: 74 kDa.

Positive Controls: A-673 cell lysate: sc-2414, HeLa whole cell lysate: sc-2200 or SNARK (h2): 293T Lysate: sc-158972.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SNARK (H-3): sc-374500. Western blot analysis of SNARK expression in non-transfected: sc-117752 (A) and human SNARK transfected: sc-158972 (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 for detailed protocols and support products.