

SNARK (h): 293T Lysate: sc-129802

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 Fas-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 NF- κ B-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 TNF α -induced kinase NUAK2. *Biochem. Biophys. Res. Commun.* 365: 541-547.

CHROMOSOMAL LOCATION

Genetic locus: NUAK2 (human) mapping to 1q32.1.

PRODUCT

SNARK (h): 293T Lysate represents a lysate of human SNARK transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

SNARK (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive SNARK antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

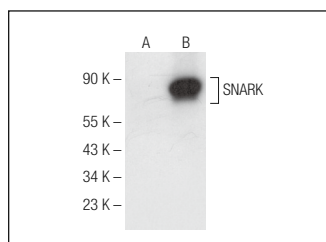
SNARK (C-12): sc-374348 is recommended as a positive control antibody for Western Blot analysis of enhanced human SNARK expression in SNARK transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

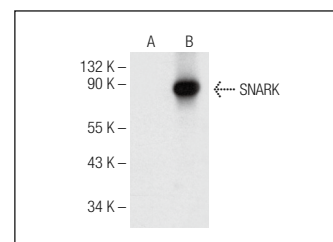
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



SNARK (C-12): sc-374348. Western blot analysis of SNARK expression in non-transfected: sc-117752 (A) and human SNARK transfected: sc-129802 (B) 293T whole cell lysates.



SNARK (E-8): sc-374283. Western blot analysis of SNARK expression in non-transfected: sc-117752 (A) and human SNARK transfected: sc-129802 (B) 293T whole cell lysates.

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.