

# SIK1 (E-22): sc-134002

## 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. SIK1 (salt-inducible kinase 1), also known as SNF1LK or MSK, is a 783 amino acid protein that contains one UBA domain and one protein kinase domain and belongs to the Ser/Thr protein kinase family. Localized to both the nucleus and the cytoplasm, SIK1 uses magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins and is thought to be important for the early stages of skeletal muscle growth and myocardial cell differentiation. Additionally, SIK1 has a potential role in regulation of the G<sub>2</sub>/M cell cycle transition, as well as in inhibitory control of CREB protein function.

## REFERENCES

1. Ruiz, J.C., et al. 1994. Identification of novel protein kinases expressed in the myocardium of the developing mouse heart. *Mech. Dev.* 48: 153-164.
2. Nishimura, Y., et al. 1999. Molecular cloning and characterization of mammalian homologues of vesicle-associated membrane protein-associated (VAMP-associated) proteins. *Biochem. Biophys. Res. Commun.* 254: 21-26.
3. 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.
4. Stephenson, A., et al. 2004. SNF1LK encodes a protein kinase that may function in cell cycle regulation. *Genomics* 83: 1105-1115.
5. Al-Hakim, A.K., et al. 2005. 14-3-3 cooperates with LKB1 to regulate the activity and localization of QSK and SIK. *J. Cell Sci.* 118: 5661-5673.
6. Takemori, H., et al. 2007. TORC-SIK cascade regulates CREB activity through the basic leucine zipper domain. *FEBS J.* 274: 3202-3209.
7. Sjöström, M., et al. 2007. SIK1 is part of a cell sodium-sensing network that regulates active sodium transport through a calcium-dependent process. *Proc. Natl. Acad. Sci. USA* 104: 16922-16927.
8. Kowanetz, M., et al. 2008. TGFβ induces SIK to negatively regulate type I receptor kinase signaling. *J. Cell Biol.* 182: 655-662.

## CHROMOSOMAL LOCATION

Genetic locus: SNF1LK (human) mapping to 21q22.3.

## SOURCE

SIK1 (E-22) is a Protein A purified rabbit polyclonal antibody raised against synthetic SIK1 peptide of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## RESEARCH USE

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

## APPLICATIONS

SIK1 (E-22) is recommended for detection of SIK1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 SIK1 siRNA (h): sc-91428, SIK1 shRNA Plasmid (h): sc-91428-SH and SIK1 shRNA (h) Lentiviral Particles: sc-91428-V.

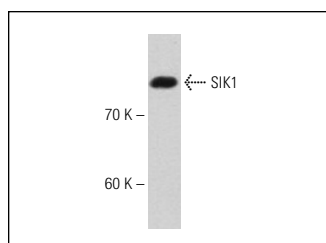
Molecular Weight of SIK1: 85 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or human stomach tissue.

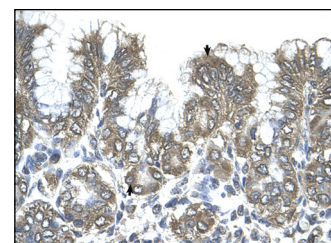
## RECOMMENDED SECONDARY REAGENTS

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) 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



SIK1 (E-22): sc-134002. Western blot analysis of SIK1 expression in Jurkat whole cell lysate.



SIK1 (E-22): sc-134002. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach tissue showing nuclear and cytoplasmic localization.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.