SANTA CRUZ BIOTECHNOLOGY, INC.

SIK1 (Y-20): sc-83754

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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_2/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: SIK1 (human) mapping to 21q22.3; Sik1 (mouse) mapping to 17 B1.

SOURCE

SIK1 (Y-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of SIK1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-83754 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SIK1 (Y-20) is recommended for detection of SIK1 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), 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); non cross-reactive with other SNF family members.

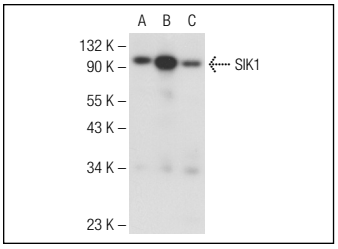
SIK1 (Y-20) is also recommended for detection of SIK1 in additional species, including equine, bovine and avian.

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.

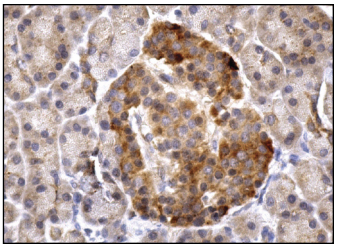
Molecular Weight of SIK1: 85 kDa.

Positive Controls: SIK1 (h2): 293T Lysate: sc-171863, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

DATA



SIK1 (Y-20): sc-83754. Western blot analysis of SIK1 expression in non-transfected 293T: sc-117752 (**A**), human SIK1 transfected 293T: sc-171863 (**B**) and HeLa (**C**) whole cell lysates.



SIK1 (Y-20): sc-83754. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells.

SELECT PRODUCT CITATIONS

1. Sekizawa, N., et al. 2011. Transcriptome analysis of aldosterone-regulated genes in human vascular endothelial cell lines stably expressing mineralocorticoid receptor. Mol. Cell. Endocrinol. 341: 78-88.

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.