SANTA CRUZ BIOTECHNOLOGY, INC.

BRSK2 (C-21): sc-130123

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. BRSK2 (BR serine/threonine kinase 2), also known as SAD1, STK29 or PEN11B, is a 736 amino acid protein that contains one protein kinase domain and is preferentially expressed in brain and testis. One of several members of the Ser/Thr protein kinase family, BRSK2 uses magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins and is thought to be involved in microtubule assembly, neuronal polarization and synaptic development. Additionally, BRSK2 may function as an autoantigen involved in small-cell lung cancer-associated limbic encephalitis. Five isoforms of BRSK2 exist due to alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609236. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. 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.
3. Lu, R., et al. 2004. Human SAD1 kinase is involved in UV-induced DNA damage checkpoint function. J. Biol. Chem. 279: 31164-31170.
4. Sabater, L., et al. 2005. BR serine/threonine kinase 2: a new autoantigen in paraneoplastic limbic encephalitis. J. Neuroimmunol. 170: 186-190.
5. Guo, Z., et al. 2006. BRSK2 is activated by cyclic AMP-dependent protein kinase A through phosphorylation at Thr260. Biochem. Biophys. Res. Commun. 347: 867-871.
6. Inoue, E., et al. 2006. SAD: a presynaptic kinase associated with synaptic vesicles and the active zone cytomatrix that regulates neurotransmitter release. Neuron 50: 261-275.
7. Bright, N.J., et al. 2008. Investigating the regulation of brain-specific kinases 1 and 2 by phosphorylation. J. Biol. Chem. 283: 14946-14954.

CHROMOSOMAL LOCATION

Genetic locus: BRSK2 (human) mapping to 11p15.5.

SOURCE

BRSK2 (C-21) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of BRSK2 of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

BRSK2 (C-21) is recommended for detection of BRSK2 of 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).

Suitable for use as control antibody for BRSK2 siRNA (h): sc-96315, BRSK2 shRNA Plasmid (h): sc-96315-SH and BRSK2 shRNA (h) Lentiviral Particles: sc-96315-V.

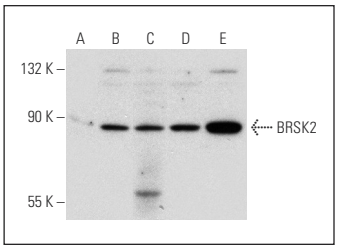
Molecular Weight of BRSK2 isoforms: 82-88 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, K-562 whole cell lysate: sc-2203 or IMR-32 cell lysate: sc-2409.

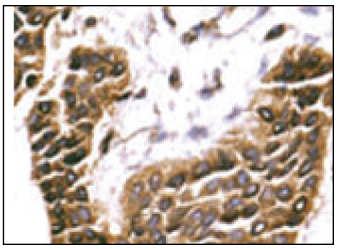
RECOMMENDED SECONDARY REAGENTS

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

DATA



BRSK2 (C-21): sc-130123. Western blot analysis of BRSK2 expression in non-transfected 293T: sc-117752 (**A**), mouse BRSK2 transfected 293T: sc-178339 (**B**), HL-60 (**C**), K-562 (**D**) and IMR-32 (**E**) whole cell lysates.



BRSK2 (C-21): sc-130123. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cancer tissue showing cytoplasmic staining.

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.