SANTA CRUZ BIOTECHNOLOGY, INC.

BRSK1 (B-1): sc-376099

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. BRSK1 (BR serine/threonine-protein kinase 1), also known as SAD1, is a 794 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one UBA domain and one protein kinase domain. Expressed in a variety of tissues with highest expression in testis and brain, BRSK1 uses magensium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins, including Wee 1 and Cdc25B. Via its kinase activity toward proteins that are involved in microtubule assembly, BRSK1 plays an essential role in neuronal polarization and may be involved in regulating cell cycle arrest in response to DNA damage, Two isoforms of BRSK1 exist due to alternative splicing events.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609235. 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. Kishi, M., et al. 2005. Mammalian SAD kinases are required for neuronal polarization. Science 307: 929-932.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: BRSK1 (human) mapping to 19q13.42; Brsk1 (mouse) mapping to 7 A1.

SOURCE

BRSK1 (B-1) is a mouse monoclonal antibody raised against amino acids 462-571 mapping within an internal region of BRSK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BRSK1 (B-1) is available conjugated to agarose (sc-376099 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376099 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376099 PE), fluorescein (sc-376099 FITC), Alexa Fluor® 488 (sc-376099 AF488), Alexa Fluor® 546 (sc-376099 AF546), Alexa Fluor® 594 (sc-376099 AF594) or Alexa Fluor® 647 (sc-376099 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376099 AF680) or Alexa Fluor® 790 (sc-376099 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

BRSK1 (B-1) is recommended for detection of BRSK1 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 BRSK1 siRNA (h): sc-97540, BRSK1 siRNA (m): sc-141754, BRSK1 shRNA Plasmid (h): sc-97540-SH, BRSK1 shRNA Plasmid (m): sc-141754-SH, BRSK1 shRNA (h) Lentiviral Particles: sc-97540-V and BRSK1 shRNA (m) Lentiviral Particles: sc-141754-V.

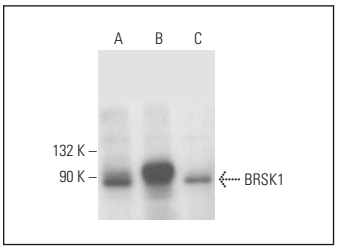
Molecular Weight of BRSK1: 87 kDa.

Positive Controls: IMR-32 nuclear extract: sc-2148, SH-SY5Y cell lysate: sc-3812 or SK-N-SH cell lysate: sc-2410.

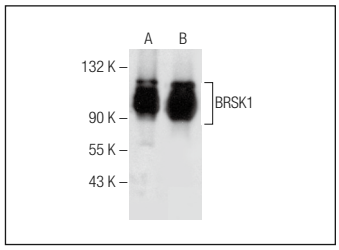
RECOMMENDED SUPPORT REAGENTS

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



BRSK1 (B-1): sc-376099. Western blot analysis of BRSK1 expression in SK-N-SH (**A**), Neuro-2A (**B**) and EOC 20 (**C**) whole cell lysates.



BRSK1 (B-1): sc-376099. Western blot analysis of BRSK1 expression in IMR-32 (**A**) and SH-SY5Y (**B**) nuclear extracts.

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.