SANTA CRUZ BIOTECHNOLOGY, INC.

# BRSK2 (I-15): sc-167224

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. 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/
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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.
6. King, M.C., et al. 2008. A network of nuclear envelope membrane proteins linking centromeres to microtubules. Cell 134: 427-438.
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.
8. Witte, H., et al. 2008. Microtubule stabilization specifies initial neuronal polarization. J. Cell Biol. 180: 619-632.


## CHROMOSOMAL LOCATION

Genetic locus: BRSK2 (human) mapping to 11p15.5; Brsk2 (mouse) mapping to 7 F5.

## SOURCE

BRSK2 (I-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of BRSK2 of human origin.

## STORAGE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-167224 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

BRSK2 (I-15) is recommended for detection of BRSK2 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with BRSK1.

BRSK2 (I-15) is also recommended for detection of BRSK2 in additional species, including bovine and avian.

Suitable for use as control antibody for BRSK2 siRNA (h): sc-96315, BRSK2 siRNA (m): sc-141755, BRSK2 shRNA Plasmid (h): sc-96315-SH, BRSK2 shRNA Plasmid (m): sc-141755-SH, BRSK2 shRNA (h) Lentiviral Particles: sc-96315-V and BRSK2 shRNA (m) Lentiviral Particles: sc-141755-V.

Molecular Weight of BRSK2 isoforms: 82-88 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.