

Product Information

Anti-BRSK1

produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200392**

Product Description

Anti-BRSK1 is produced in rabbit using as immunogen a synthetic peptide corresponding to an internal sequence of human BRSK1 (GeneID: 84446), conjugated to KLH. The corresponding sequence is identical in mouse BRSK1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-BRSK1 specifically recognizes mouse BRSK1. The antibody may be used in various immunochemical techniques including immunoblotting (~90 kDa), immunoprecipitation and immunofluorescence. Detection of the BRSK1 band by immunoblotting is specifically inhibited by the BRSK1 immunizing peptide.

BRSK1 (BR serine/threonine kinase 1, also known as SAD-1, SAD-B) and BRSK2 (SAD-A) belong to the family of Ser/Thr AMPK-related kinases that are specifically expressed in the mammalian brain.¹⁻³ BRSK1 has been shown to localize to and associate with synaptic vesicle in the hippocampus and cerebellum and is required for the polarization of cortical neurons.²⁻⁴ Knock-out mice that lack both BRSK1 and BRSK2 have defects in neuronal polarity and die prematurely after birth. LKB1 phosphorylates and activates the SAD kinases by phosphorylation of a specific threonine residue within the T-loop activation segment of the kinase domain.^{2,3} BRSK1/2 in turn phosphorylate downstream effectors such as the microtubule associated protein tau and the cell cycle checkpoint kinase Wee1.^{2,5} Phosphorylation of Wee1 by BRSK1/2 is required to regulate its activity in polarized neurons, and is an essential step for the differentiation of polarized neurons. In addition, BRSK1/SADB has been shown to be localized to centrosomes and to control centrosome duplication.⁶ SADB phosphorylates γ -tubulin on Ser¹³¹ residue, suggesting that it controls centrosome homeostasis by regulating the phosphorylation of γ -tubulin.⁶

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~1.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 μ g/mL is recommended using extracts of mouse forebrain (S1 fraction).

Immunoprecipitation: A working amount of 10-20 μ g is recommended using lysates of HEK-293T cells over-expressing mouse BRSK1.

Immunofluorescence: a working concentration of 0.2-0.4 μ g/mL is recommended using HEK-293T cells over-expressing mouse BRSK1.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Kishi, M., et al., *Science*, **307**, 929-932 (2005).
2. Barnes, A.P., et al., *Cell*, **129**, 549-563 (2007).
3. Shelly, M., et al., *Cell*, **129**, 565-577 (2007).
4. Inoue, E., et al., *Neuron*, **50**, 261-275 (2006).
5. Müller, M., et al., *J. Cell Sci.*, **123**, 286-294 (2010).
6. Alvarado-Kristensson, M., et al., *Nature Cell Biol.*, **11**, 1081-1092 (2009).

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