

Product Information

Anti-BRSK2 (N-terminal)

produced in rabbit, affinity isolated antibody

Catalog Number **SAB4200431**

Product Description

Anti-BRSK2 (N-terminal) is developed in rabbit using as immunogen a synthetic peptide corresponding to a sequence near the N-terminus of human BRSK2 (GeneID: 9024), conjugated to KLH. The corresponding sequence is identical in rat and mouse BRSK2. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-BRSK2 (N-terminal) specifically recognizes mouse BRSK2. The antibodies may be used in various immunochemical techniques including immunoblotting (~75 kDa) and immunofluorescence. Detection of the BRSK2 band by immunoblotting is specifically inhibited by the BRSK2 immunizing peptide.

BRSK1 (BR serine/threonine kinase 1, also known as SAD-1 and 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 vesicles in the hippocampus and cerebellum, and is required for the polarization of cortical neurons.²⁻⁴ Knockout mice lacking 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} LKB1 has been shown to phosphorylate BRSK2 at Thr¹⁷⁴, increasing its kinase activity; whereas, cAMP-dependent protein kinase A (PKA), as another upstream kinase of BRSK2, has been shown to phosphorylate BRSK2 at Thr²⁶⁰.⁵ BRSK1/2 in turn phosphorylate downstream effectors such as the microtubule associated protein tau and the cell cycle checkpoint kinase Wee1.^{2,6} 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.

Reagent

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

Antibody Concentration: ~1.0 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 is not recommended. Storage in “frost-free” freezers is also 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 1–2 µg/mL is recommended using HEK-293T cell lysates overexpressing mouse BRSK2.

Immunofluorescence: a working concentration of 0.1–0.2 µg/mL is recommended using HEK-293T cells overexpressing mouse BRSK2.

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. Guo, Z. et al., *Biochem. Biophys. Res. Commun.*, **347**, 867-871 (2006).
6. Müller, M. et al., *J. Cell Sci.*, **123**, 286-294 (2010).

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