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BRSK2 Antibody

Catalog # ASC10520

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q8IWQ3
Other Accession	Q8IWQ3, 116241272
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	81633
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	BRSK2 antibody can be used for detection of BRSK2 by Western blot at 0.5 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	9024
Other Names	BRSK2 Antibody: SAD1, SADA, STK29, PEN11B, C11orf7, HUSSY-12, Brain-selective kinase 2, BR serine/threonine kinase 2
Target/Specificity	BRSK2;
Reconstitution & Storage	BRSK2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	BRSK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BRSK2
Synonyms	C11orf7, PEN11B, SADA, STK29
Function	Serine/threonine-protein kinase that plays a key role in polarization of neurons and axonogenesis, cell cycle progress and insulin secretion. Phosphorylates CDK16, CDC25C, MAPT/TAU, PAK1 and WEE1. Following phosphorylation and activation by STK11/LKB1, acts as a key regulator of polarization of cortical neurons, probably by mediating phosphorylation of microtubule-associated proteins such as MAPT/TAU at 'Thr-529' and 'Ser-579'. Also regulates neuron polarization by mediating phosphorylation of WEE1 at

	'Ser-642' in postmitotic neurons, leading to down-regulate WEE1 activity in polarized neurons. Plays a role in the regulation of the mitotic cell cycle progress and the onset of mitosis. Plays a role in the regulation of insulin secretion in response to elevated glucose levels, probably via phosphorylation of CDK16 and PAK1. While BRSK2 phosphorylated at Thr- 174 can inhibit insulin secretion (PubMed:22798068), BRSK2 phosphorylated at Thr-260 can promote insulin secretion (PubMed:22669945). Regulates reorganization of the actin cytoskeleton. May play a role in the apoptotic response triggered by endoplasmic reticulum (ER) stress.
Cellular Location	Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, perinuclear region. Endoplasmic reticulum. Note=Detected at centrosomes during mitosis. Localizes to the endoplasmic reticulum in response to stress caused by tunicamycin
Tissue Location	Detected in pancreas islets (at protein level).

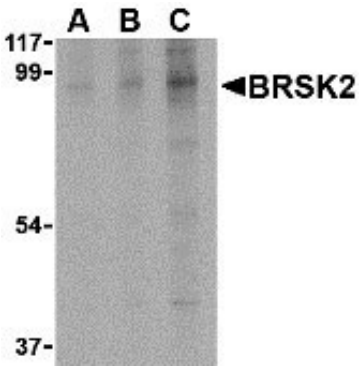
Background

BRSK2 Antibody: BRSK2 was initially identified through a computer screen of the human genome and shows significant homology to the C. elegans neuronal cell polarity regulator SAD1. BRSK2 is expressed in the brain and to a lesser extent in the testes. BRSK2 is a member of the AMP-activated protein kinase subfamily and can be activated by the tumor suppressor kinase LKB1. More recently, it has been shown that both BRSK2 and the related protein BRSK1 are required for mammalian neuronal polarization. While BRSK1- and BRSK2-null mice were viable, double-mutant mice died within two hours of birth. Neurons from these mice showed uniformly-sized neurites as opposed to the normal long axon and multiple shorter dendrites. These neurites also displayed both axonal and dendritic markers. BRSK2 has also been shown to be an autoantigen in paraneoplastic limbic encephalitis. At least four isoforms of BRSK2 are known to exist.

References

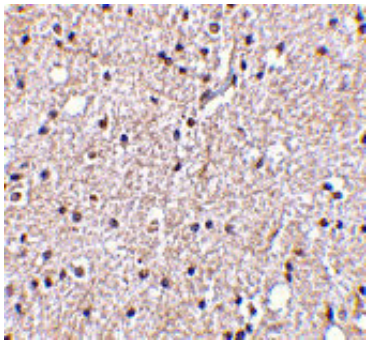
Manning G, Whyte DB, Martinez R, et al. The protein kinase complement of the human genome. Science2002; 298:1912-34.
Lizcano JM, Goransson O, Toth R, et al. LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1. EMBO J.2004; 23:833-43.
Kishi M, Pan YA, Crump J, et al. Mammalian SAD kinases are required for neuronal polarization. Science2005; 307:929-32.
Sabater L, Gomez-Choco M, Saiz A, et al. BR serine/threonine kinase 2: A new autoantigen in paraneoplastic limbic encephalitis. J. Neuroimmunol.2005; 170:186-90.

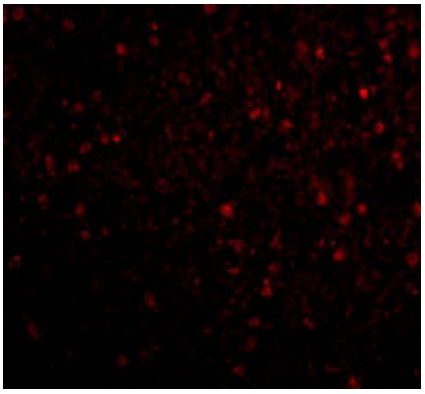
Images



Western blot analysis of BRSK2 in human brain tissue lysate with BRSK2 antibody at (A) 0.5, (B) 1 and (C) 2 µg/mL.

Immunohistochemistry of BRSK2 in human brain tissue with BRSK2 antibody at 5 µg/mL.





Immunofluorescence of BRSK2 in Human Brain cells with BRSK2 antibody at 20 µg/mL.

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