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BRSK2 Rabbit pAb

Catalog # AP97165

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q8IWQ3
Other Accession	Q8IWQ3
Reactivity	Mouse
Predicted	Rat, Human, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	81633
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human BRSK2
Epitope Specificity	624-724/736
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. SNF1 subfamily.Contains 1 protein kinase domain. Contains 1 UBA domain.
Post-translational modifications	Phosphorylated at Thr-174 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Not phosphorylated at Thr-174 by CaMKK2. In contrast, it is phosphorylated and activated by CaMKK1. May be inactivated via dephosphorylation of Thr-174 by PP2C. May be phosphorylated at Thr-260 by PKA. However, phosphorylation at Thr-260 by PKA was not comfirmed later (PubMed:18339622).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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. BRSK2 (BR serine/threonine kinase 2), also known as SAD1, STK29 or PEN11B, is a 736 amino acid protein that contains one protein kinase domain and is preferentially expressed in brain and testis. One of several members of the Ser/Thr protein kinase family, BRSK2 uses magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins and is thought to be involved in microtubule assembly, neuronal polarization and synaptic development. Additionally, BRSK2 may function as an autoantigen involved in small-cell lung cancer-associated limbic encephalitis. Five isoforms of BRSK2 exist due to alternative splicing events.

Additional Information

Gene ID	9024

Other Names	C11orf7; PEN11B; SAD-A; SAD1; SADA; STK29; 4833424K13Rik; BRSK2_HUMAN; BRSK2; Brain-selective kinase 2; Brain-specific serine/threonine-protein kinase 2 (BR serine/threonine-protein kinase 2); Serine/threonine-protein kinase 29; Serine/threonine-protein kinase SAD-A; 2.7.11.1; BRSK2_MOUSE; 2.7.11.26; Kiaa4256; BR serine/threonine kinase 2; chromsosome 11 open reading frame 7; serine/threonine kinase 29; brain selective kinase 2
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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).

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