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SAD1 (BRSK1) Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8168a

Product Information

Application	WB, E
Primary Accession	Q8TDC3
Other Accession	D3ZML2, Q69Z98, Q8IWQ3, B2DD29, Q5RJI5, NP_115806
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB5413
Calculated MW	85087
Antigen Region	108-139

Additional Information

Gene ID	84446
Other Names	Serine/threonine-protein kinase BRSK1, Brain-selective kinase 1, Brain-specific serine/threonine-protein kinase 1, BR serine/threonine-protein kinase 1, Serine/threonine-protein kinase SAD-B, Synapses of Amphids Defective homolog 1, SAD1 homolog, hSAD1, BRSK1, KIAA1811, SAD1, SADB
Target/Specificity	This SAD1 (BRSK1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 108-139 amino acids from the N-terminal region of human SAD1 (BRSK1).
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SAD1 (BRSK1) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BRSK1

Synonyms	KIAA1811, SAD1, SADB
Function	Serine/threonine-protein kinase that plays a key role in polarization of neurons and centrosome duplication. Phosphorylates CDC25B, CDC25C, MAPT/TAU, RIMS1, TUBG1, TUBG2 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. In neurons, localizes to synaptic vesicles and plays a role in neurotransmitter release, possibly by phosphorylating RIMS1. Also acts as a positive regulator of centrosome duplication by mediating phosphorylation of gamma-tubulin (TUBG1 and TUBG2) at 'Ser-131', leading to translocation of gamma-tubulin and its associated proteins to the centrosome. Involved in the UV-induced DNA damage checkpoint response, probably by inhibiting CDK1 activity through phosphorylation and activation of WEE1, and inhibition of CDC25B and CDC25C.
Cellular Location	Cytoplasm. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Synapse {ECO:0000250|UniProtKB:B2DD29}. Presynaptic active zone {ECO:0000250|UniProtKB:B2DD29}. Cytoplasmic vesicle, secretory vesicle, synaptic vesicle {ECO:0000250|UniProtKB:B2DD29}. Note=Nuclear in the absence of DNA damage. Translocated to the nucleus in response to UV- or MMS-induced DNA damage (By similarity).
Tissue Location	Widely expressed, with highest levels in brain and testis. Protein levels remain constant throughout the cell cycle

Background

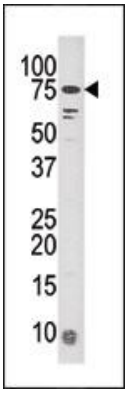
BRSK1 may be involved as a checkpoint kinase in the regulation of G2/M arrest in response to UV- or methyl methane sulfonate (MMS)-induced, but not IR-induced, DNA damage. This protein phosphorylates WEE1 and CDC25B in vitro and CDC25C in vitro and in vivo. BRSK1 is partitioned between cytoplasmic and nuclear locations in the absence of DNA damage, but translocates to the nucleus in response to Uv- or MMS-induced DNA damage. BRSK1 shares significant homology with the fission yeast Cdr2, a mitosis-regulatory kinase, and Caenorhabditis elegans SAD1, a neuronal cell polarity regulator. The BRSK1 transcript is expressed ubiquitously with the highest levels of expression in brain and testis.

References

Lu, R., et al., J. Biol. Chem. 279(30):31164-31170 (2004).
Lizcano, J.M., et al., EMBO J. 23(4):833-843 (2004).

Images

Western blot analysis of anti-KIAA181 Pab (Cat. #AP8168a) in mouse liver tissue lysate (35ug/lane). KIAA181(arrow) was detected using the purified Pab.



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