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MARK1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7144a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9P0L2
Other Accession	Q2HIY1
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	89003
Antigen Region	6-40

Additional Information

Gene ID	4139
Other Names	Serine/threonine-protein kinase MARK1, MAP/microtubule affinity-regulating kinase 1, PAR1 homolog c, Par-1c, Par1c, MARK1 (HGNC:6896)
Target/Specificity	This MARK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 6-40 amino acids from the N-terminal region of human MARK1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	MARK1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MARK1 (HGNC:6896)
Function	Serine/threonine-protein kinase (PubMed: 23666762). Involved in cell polarity and microtubule dynamics regulation. Phosphorylates DCX, MAP2 and MAP4. Phosphorylates the microtubule-associated protein MAPT/TAU

	(PubMed:23666762). Involved in cell polarity by phosphorylating the microtubule-associated proteins MAP2, MAP4 and MAPT/TAU at KXGS motifs, causing detachment from microtubules, and their disassembly. Involved in the regulation of neuronal migration through its dual activities in regulating cellular polarity and microtubule dynamics, possibly by phosphorylating and regulating DCX. Also acts as a positive regulator of the Wnt signaling pathway, probably by mediating phosphorylation of dishevelled proteins (DVL1, DVL2 and/or DVL3).
Cellular Location	Cell membrane; Peripheral membrane protein. Cytoplasm, cytoskeleton. Cytoplasm Cell projection, dendrite. Note=Appears to localize to an intracellular network.
Tissue Location	Highly expressed in heart, skeletal muscle, brain, fetal brain and fetal kidney.

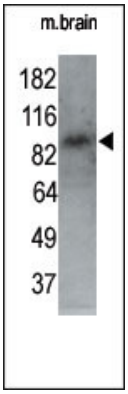
Background

MARK is a family of kinases that is known for its involvement in establishing cell polarity and in phosphorylating tau protein during Alzheimer neurodegeneration. Expression of MARK causes the phosphorylation of MAPs at their KXGS motifs, thereby detaching MAPs from the microtubules and thus facilitating the transport of particles. This occurs without impairing the intrinsic activity of motors because the velocity during active movement remains unchanged. In primary retinal ganglion cells, transfection with tau leads to the inhibition of axonal transport of mitochondria, APP vesicles, and other cell components which leads to starvation of axons and vulnerability against stress. This transport inhibition can be rescued by phosphorylating tau with MARK

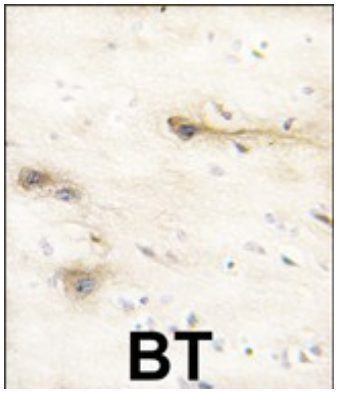
References

Drewes, G., et al., Cell 89(2):297-308 (1997).

Images



The anti-MARK1 N-term Pab (Cat. #AP7144a) is used in Western blot to detect MARK1 in P7 mouse whole brain lysate (60 ug). 1:250 dilution of anti-MARK1 pab was used. Data and protocol kindly provided by DR. Shengli Zhao, M.D., Ph.D. of Duke University Medical Center.



Formalin-fixed and paraffin-embedded human brain tissue reacted with MARK1 Antibody (N-term)(Cat.#AP7144a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Citations

- Pancreatic LKB1 deletion leads to acinar polarity defects and cystic neoplasms.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.