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phospho-MARK1 (Thr215) Rabbit pAb

Catalog # AP99365

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q9P0L2
Other Accession	Q9P0L2
Predicted	Rat, Pig, Human, Mouse, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	89003
Physical State	Liquid
Immunogen	KLH conjugated synthesised phosphopeptide derived from human MARK1 around the phosphorylation site of Thr215
Epitope Specificity	LD(p-T)FC
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 KA1 (kinase-associated) domain. Contains 1 protein kinase domain. Contains 1 UBA domain.
Post-translational modifications	Phosphorylation at Thr-613 by PRKCZ/aPKC in polarized epithelial cells inhibits the kinase activity By similarity. Phosphorylated at Thr-215 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Phosphorylation at Thr-215 by TAOK1 activates the kinase activity, leading to phosphorylation and detachment of MAPT/TAU from microtubules. Phosphorylation at Ser-219 by GSK3-beta (GSK3B) inhibits the kinase activity.
DISEASE	Genetic variations in MARK1 may be associated with susceptibility to autism. MARK1 is overexpressed in the prefrontal cortex of patients with autism and causes changes in the function of cortical dendrites.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	MARK1 is thought to play a role in the stability of the microtubule matrix of the cytoskeleton. MARK1 is activated by phosphorylation of Thr215 by LKB1 in complex with STRAD and MO25. Localized to the cytoskeleton, MARK1 contains one kinase-associated (KA1) domain, one protein kinase domain and one UBA domain. Expressed as three isoforms produced by alternative splicing, MARK1 is found with highest levels in brain, skeletal muscle and heart.

Additional Information

Gene ID	4139
Other Names	MARK; Par-1c; Par1c; B930025N23Rik; Emk3; mKIAA1477; mPar-1c; MARK1_HUMAN; MARK1; MAP/microtubule affinity-regulating kinase 1; PAR1

	homolog c (Par-1c | Par1c); 2.7.11.1; 2.7.11.26; KIAA1477; MARK1_MOUSE; ELKL motif serine/threonine-protein kinase 3; PAR1 homolog c (Par-1c | mPar-1c); MARK1_RAT; microtubule affinity regulating kinase 1; MARK1 (phospho-T215); p-MARK1; phospho-MARK1; MARK1 (phospho-Thr215)
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
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	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.

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