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Rabbit Anti-phospho-MARK2 (Thr596)/Cy5 Conjugated antibody

SL5742R-Cy5

Product Name	Anti-phospho-MARK2(Thr596)/Cy5
Chinese Name	Cy5 标记的磷酸化丝氨酸/苏氨酸蛋白激酶 MARK2 抗体
Alias	ELKL motif kinase 1; MARK2(phospho T596); ELKL motif kinase; EMK-1; EMK1; MAP/microtubule affinity regulating kinase 2; MAP/microtubule affinity-regulating kinase 2; Mark2; MARK2_HUMAN; PAR1 homolog; Serine/threonine protein kinase MARK2; Serine/threonine-protein kinase MARK2.
Product Type	Phosphorylated anti
Research Area	immunology Signal transduction Kinases and Phosphatases Cytoskeleton
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Mouse,Rat(predicted:Dog,Pig,Cow,Horse,Sheep,GuineaPig)
Applications	IF=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight	82-90kDa
Form	Lyophilized or Liquid
Concentration	1mg/ml
immunogen	KLH conjugated Synthesised phosphopeptide derived from human MARK2 around the phosphorylation site of Thr596
Lsotype	IgG
Purification	affinity purified by Protein A
Storage Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Product Detail	**background:**

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MARK2 refers to MAP/microtubule affinity-regulating kinase 2 isoform a [Homo sapiens]. EMK (ELKL Motif Kinase) is a small family of ser/thr protein kinases involved in the control of cell polarity, microtubule. stability and cancer. Several cDNA clones have been isolated that encoded two isoforms of the human ser/thr protein kinase EMK1 called MARK2. These isoforms were characterized by the presence of a 162-bp alternative exon that gave rise to two forms, one containing the exon and the other one lacking it. Both forms were found to be coexpressed in a number of selected cell lines and tissue samples. Human MARK2 was shown to be encoded by a single mRNA ubiquitously expressed. This transcription variant includes the alternative exon in the coding region and therefore codes for a longer protein. Multiple splice variants exist for this protein.

Function:
Serine/threonine-protein kinase involved in cell polarity and microtubule dynamics regulation. Phosphorylates CRTC2/TORC2, DCX, HDAC7, KIF13B, MAP2, MAP4, MAPT/TAU, and RAB11FIP2. Plays a key role in cell polarity by phosphorylating the microtubule-associated proteins MAP2, MAP4 and MAPT/TAU at KXGS motifs, causing detachment from microtubules, and their disassembly. Regulates epithelial cell polarity by phosphorylating RAB11FIP2. Involved in the regulation of neuronal migration through its dual activities in regulating cellular polarity and microtubule dynamics, possibly by phosphorylating and regulating DCX. Regulates axogenesis by phosphorylating KIF13B, promoting interaction between KIF13B and 14-3-3 and inhibiting microtubule-dependent accumulation of KIF13B. Also required for neurite outgrowth and establishment of neuronal polarity. Regulates localization and activity of some histone deacetylases by mediating phosphorylation of HDAC7, promoting subsequent interaction between HDAC7 and 14-3-3 and export from the nucleus. Also acts as a positive regulator of the Wnt signaling pathway, probably by mediating phosphorylation of dishevelled proteins (DVL1, DVL2 and/or DVL3). Modulates the developmental decision to build a columnar versus a hepatic epithelial cell apparently by promoting a switch from a direct to a transcytotic mode of apical protein delivery. Essential for the asymmetric development of membrane domains of polarized epithelial cells.

Subunit:
Homodimer. Interacts with PAK7/PAK5; leading to inhibit the protein kinase activity (By similarity). Interacts (when phosphorylated at Thr-596) with YWHAZ. In case of infection, interacts with H.pylori CagA, leading to inhibit kinase activity and junctional and polarity defects.

Subcellular Location:
Cell membrane; Peripheral membrane protein. Cytoplasm.

Note=Phosphorylation at Thr-596 by PRKCZ/aPKC and subsequent interaction with 14-3-3 protein YWHAZ promotes relocation from the cell membrane to the cytoplasm.

Tissue Specificity:
High levels of expression in heart, brain, skeletal muscle and pancreas, lower levels observed in lung, liver and kidney.

Post-translational modifications:
Autophosphorylated. Phosphorylated at Thr-208 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Phosphorylation at Thr-208 by TAOK1 activates the kinase activity, leading to phosphorylation and detachment of MAPT/TAU from microtubules. Phosphorylation at Ser-212 by GSK3-beta (GSK3B) inhibits the kinase activity. Phosphorylation by CaMK1 promotes activity and is required to promote neurite outgrowth. Phosphorylation at Thr-596 by PRKCZ/aPKC in polarized epithelial cells inhibits the kinase activity and promotes binding to 14-3-3 protein YWHAZ, leading to relocation from cell membrane to cytoplasm.

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.

Database links:

Entrez Gene: 2011 Human

Entrez Gene: 13728 Mouse

Entrez Gene: 60328 Rat

Omim: 600526 Human

SwissProt: Q7KZI7 Human

SwissProt: Q05512 Mouse

SwissProt: O08679 Rat

Unigene: 567261 Human

Unigene: 258986 Mouse

Unigene: 42926 Rat

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Important Note:
This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.