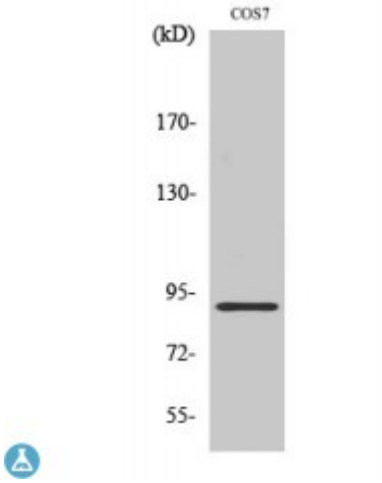
Anti-MARK1/2/3/4 antibody



Description	MARK1/2/3/4 is a protein encoded by the MARK1 gene which is approximately 89 kDa. MARK1/2/3/4 is localised to the cell membrane and cytoplasm. It is involved in cytoplasm signalling and glucose/energy metabolism. It plays a 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. MARK1/2/3/4 is highly expressed in the heart, skeletal muscle, brain and foetal kidney. Mutations in the MARK1 gene may result in Alzheimer disease. STJ94015 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of MARK1/2/3/4 protein.

Model	STJ94015
Host	Rabbit
Reactivity	Human, Mouse, Rat, Simian
Applications	ELISA, IF, IHC, WB
Immunogen	Synthesized peptide derived from human MARK1/2/3/4 around the non-phosphorylation site of T215.
Immunogen Region	150-230 aa
Gene ID	4139
Gene Symbol	MARK1
Dilution range	WB 1:500-1:2000IHC 1:100-1:300IF 1:200-1:1000ELISA 1:10000
Specificity	MARK1/2/3/4 Polyclonal Antibody detects endogenous levels of MARK1/2/3/4 protein.

Tissue Specificity	Highly expressed in heart, skeletal muscle, brain, fetal brain and fetal kidney.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Serine/threonine-protein kinase MARK1 MAP/microtubule affinity-regulating kinase 1 PAR1 homolog c Par-1c Par1c
Molecular Weight	89 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6896OMIM:606511
Alternative Names	Serine/threonine-protein kinase MARK1 MAP/microtubule affinity-regulating kinase 1 PAR1 homolog c Par-1c Par1c
Function	Serine/threonine-protein kinase involved in cell polarity and microtubule dynamics regulation. Phosphorylates DCX, MAP2, MAP4 and MAPT/TAU. 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).
Sequence and Domain Family	The UBA domain does not seem to bind ubiquitin and ubiquitin-like and might play a role in regulating the enzyme conformation and localization. Activation of the kinase activity following phosphorylation at Thr-208 is accompanied by a conformational change that alters the orientation of the UBA domain with respect to the catalytic domain . The KA1 domain mediates binding to phospholipids and targeting to membranes. Binds phosphatidic acid (PA), phosphatidylserine (PtdSer) and phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P2).
Cellular Localization	Cell membrane Cytoplasm, cytoskeleton. Appears to localize to an intracellular network.
Post-translational Modifications	Phosphorylation at Thr-613 by PRKCZ/aPKC in polarized epithelial cells inhibits the kinase activity . 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.

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