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CAMK2A Antibody (C-term E370)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7418b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9UQM7
Other Accession	P11275, P11798
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB15492
Calculated MW	54088
Antigen Region	344-371

Additional Information

Gene ID	815
Other Names	Calcium/calmodulin-dependent protein kinase type II subunit alpha, CaM kinase II subunit alpha, CaMK-II subunit alpha, CAMK2A, CAMKA, KIAA0968
Target/Specificity	This CAMK2A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 344-371 amino acids from the C-terminal region of human CAMK2A.
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	CAMK2A Antibody (C-term E370) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CAMK2A
Synonyms	CAMKA, KIAA0968

Function	Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in various processes, such as synaptic plasticity, neurotransmitter release and long-term potentiation (PubMed:14722083). Member of the NMDAR signaling complex in excitatory synapses, it regulates NMDAR-dependent potentiation of the AMPAR and therefore excitatory synaptic transmission (By similarity). Regulates dendritic spine development (PubMed:28130356). Also regulates the migration of developing neurons (PubMed:29100089). Phosphorylates the transcription factor FOXO3 to activate its transcriptional activity (PubMed:23805378). Phosphorylates the transcription factor ETS1 in response to calcium signaling, thereby decreasing ETS1 affinity for DNA (By similarity). In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK- STAT signaling pathway (PubMed:11972023). In response to interferon- beta (IFN-beta) stimulation, stimulates the JAK-STAT signaling pathway (PubMed:35568036). In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of PSAT1, inhibiting ferroptosis by promoting GPX4 hydroxylation and stability (PubMed:40281343). Acts as a negative regulator of 2-arachidonoylglycerol (2-AG)-mediated synaptic signaling via modulation of DAGLA activity (By similarity).
Cellular Location	Synapse {ECO:0000250|UniProtKB:P11275}. Postsynaptic density {ECO:0000250|UniProtKB:P11275}. Cell projection, dendritic spine. Cell projection, dendrite. Note=Postsynaptic lipid rafts {ECO:0000250|UniProtKB:P11275}

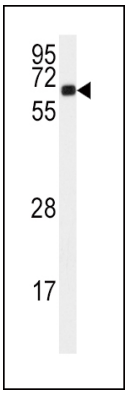
Background

CAMK2A belongs to the serine/threonine protein kinases family, and to the Ca(2+)/calmodulin-dependent protein kinases subfamily. Calcium signaling is crucial for several aspects of plasticity at glutamatergic synapses. This calcium calmodulin-dependent protein kinase is composed of four different chains: alpha, beta, gamma, and delta. The alpha chain encoded by the gene for CAMK2A is required for hippocampal long-term potentiation (LTP) and spatial learning. In addition to its calcium-calmodulin (CaM)-dependent activity, this protein can undergo autophosphorylation, resulting in CaM-independent activity.

References

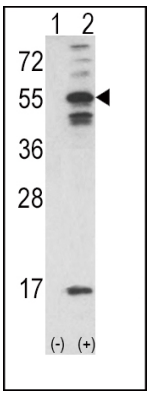
Lee,C.W., Mol. Pharmacol. 73 (5), 1454-1464 (2008)
Yuan,K., Lab. Invest. 87 (9), 938-950 (2007)

Images



Western blot analysis of anti-CAMK2A Antibody (C-term E370) (Cat.#AP7418b) in 293 cell line lysates (35ug/lane). CAMK2A(arrow) was detected using the purified Pab.

Western blot analysis of CAMK2A (arrow) using rabbit



polyclonal CAMK2A Antibody (C-term E370) (Cat.#AP7418b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the CAMK2A gene (Lane 2).



Formalin-fixed and paraffin-embedded human brain tissue reacted with CAMK2A (C-term E370) (Cat.#AP7418b), 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.

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