10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

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
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). 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}

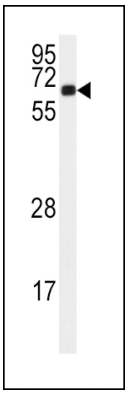
Background

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

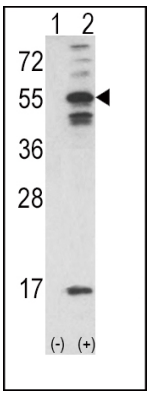
Lee,C.W., Mol. Pharmacol. 73 (5), 1454-1464 (2008)
Yuan,K., Lab. Invest. 87 (9), 938-950 (2007)

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.