CaMKII monoclonal antibody (6G9)

CaMKIIa, the alpha subunit of Ca^{2+} calmodulin-dependent protein kinase II is part of a family of multifunctional protein kinases, which play a major role in Ca^{2+}-mediated signal transduction. CaMKIIa is expressed in many different tissues but is specifically found in the neurons of the forebrain and its mRNA is found within the dendrites as well as the soma of the neuron. The neuronal CaMKII consists of two major subunits of 52 and 60 kDa which are encoded by a- and b-CaMKII genes, respectively. Additional isoforms are generated by alternative splicing of these as well as of the ubiquitious g- and d-CaMKII genes. Each subunit has an ATP-binding domain (arginine-X-X-serune/threonine), consensus phosphorylation site, catalytic domain, and a centrally located regulatory domain which has calmodulin binding activity. Activation and autophosphorylation of CaMKII may regulate numerous neuronal processes which includes two forms of synaptic plasticity, long term potentiation and long term depression. Neuronal CaMKII subunits assemble as large multimeric holoenzymes. The C-terminal association domains of 6-12 subunits assemble into a central globular structure from which the N-terminal catalytic/regulatory domains extend radially like petals of a flower. The subunit composition of the rat forebrain CaMKII holoenzyme consists of heteromers composed of a and β subunits at a ratio of 2:1 and homomers composed of only a subunits. The association of CaMKII subunits leads to the positioning of their catalytic/regulatory domains in close proximity and the neighboring calmodulin-bound subunits cooperate to rapidly phosphorylate each other. Autophosphorylation also enables CaMKII to attain an enhanced affinity for NMDA receptors in postsynaptic densities.

This antibody is covered by our Worry-Free Guarantee.

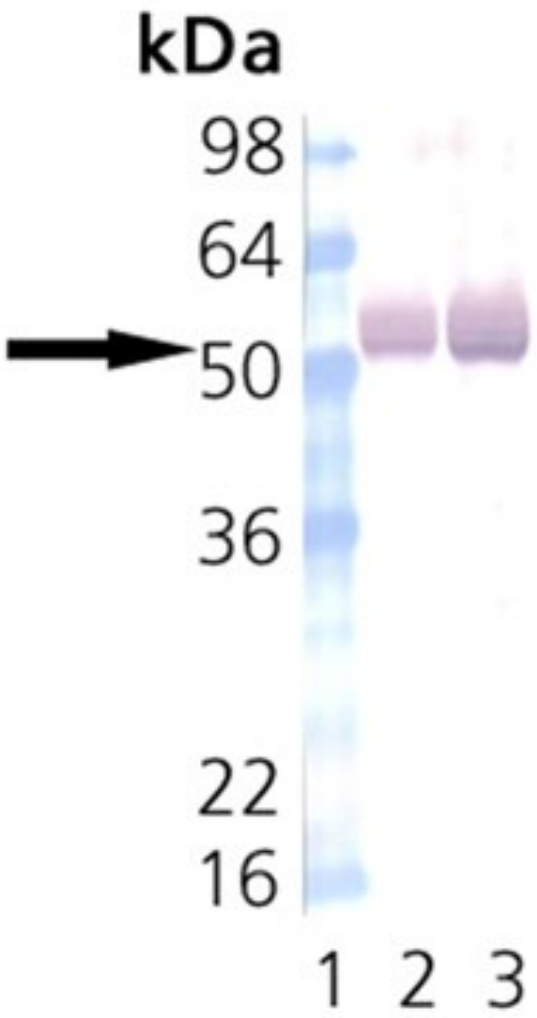
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ADI-KAM-CA002-D	50µg
ADI-KAM-CA002-F	200µg

Manuals, SDS & CofA

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Western Blot Analysis of Calmodulin-Dependent Protein Kinase II: Lane 1: MWM, Lane 2: Mouse Brain, Lane 3: Rat Brain.

Handling & Storage

Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Calcium/calmodulin-dependent protein kinase II
Application	IHC, in vitro Assay, WB
Application Notes	Detects a band of ~50-60kDa by Western blot.
Clone	6G9
Formulation	Liquid. In PBS containing 50% glycerol and 0.09% sodium azide.
GenBank ID	J05072
Host	Mouse
Immunogen	Rat CaMKII (partially purified).
Isotype	IgG1
Purity Detail	Protein G affinity purified.
Recommendation Dilutions/Conditions	Western Blot (Colorimetric, 1:1,000)Suggested dilutions/conditions may not be available for all applications.Optimal conditions must be determined individually for each application.
Source	Purified from hybridoma tissue culture supernatant.
Species Reactivity	Mouse, Rat
UniProt ID	P15791

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