

# CaMKII Rabbit mAb

Catalog # AP75184

## Product Information

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<b>Application</b>	WB, IHC-P
<b>Primary Accession</b>	<a href="#">Q13554</a>
<b>Reactivity</b>	Rat, Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Purification</b>	Affinity Purified
<b>Calculated MW</b>	72678

## Additional Information

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<b>Gene ID</b>	816
<b>Other Names</b>	CAMK2B
<b>Dilution</b>	WB~~1:1000-1:5000 IHC-P~~N/A
<b>Format</b>	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	CAMK2B
<b>Synonyms</b>	CAM2, CAMK2, CAMKB
<b>Function</b>	Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca(2+) transport in skeletal muscle (PubMed: <a href="#">16690701</a> ). In neurons, plays an essential structural role in the reorganization of the actin cytoskeleton during plasticity by binding and bundling actin filaments in a kinase- independent manner. This structural function is required for correct targeting of CaMK2A, which acts downstream of NMDAR to promote dendritic spine and synapse formation and maintain synaptic plasticity which enables long-term potentiation (LTP) and hippocampus-dependent learning. In developing hippocampal neurons, promotes arborization of the dendritic tree and in mature neurons, promotes dendritic remodeling. Also regulates the migration of developing neurons

(PubMed:[29100089](#)). Participates in the modulation of skeletal muscle function in response to exercise (PubMed:[16690701](#)). In slow-twitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca<sup>2+</sup> transport and in fast-twitch muscle participates in the control of Ca<sup>2+</sup> release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2. In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK-STAT signaling pathway (By similarity). Phosphorylates reticulophagy regulator RETREG1 at 'Ser-151' under endoplasmic reticulum stress conditions which enhances RETREG1 oligomerization and its membrane scission and reticulophagy activity (PubMed:[31930741](#)).

### Cellular Location

Cytoplasm, cytoskeleton. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Sarcoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side. Synapse  
{ECO:0000250|UniProtKB:P08413} Note=In slow-twitch muscle, evenly distributed between longitudinal SR and junctional SR

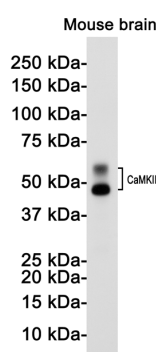
### Tissue Location

Widely expressed. Expressed in adult and fetal brain. Expression is slightly lower in fetal brain. Expressed in skeletal muscle.

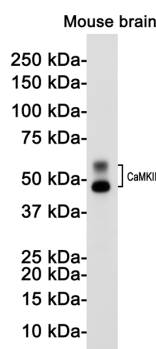
## Background

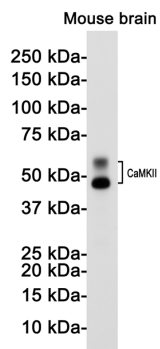
CaM-kinase II (CAMK2) is a prominent kinase in the central nervous system that may function in long-term potentiation and neurotransmitter release. Member of the NMDAR signaling complex in excitatory synapses it may regulate NMDAR-dependent potentiation of the AMPAR and synaptic plasticity.

## Images



Western blot analysis of CaMKII in mouse brain lysates using CaMKII beta antibody.





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