abcam

Product datasheet

Anti-CaMKI antibody [EPR2217Y] ab68234

Recombinant RabMAb

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Overview

Product name	Anti-CaMKI antibody [EPR2217Y]
Description	Rabbit monoclonal [EPR2217Y] to CaMKI
Tested applications	**Suitable for:** WB, IHC-P, ICC **Unsuitable for:** Flow Cyt or IP
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	A specific peptide corresponding to residues on the N-terminus of human CaMKI.
Positive control	SH-SY5Y lysate, human, mouse and rat brain lysate and human kidney tissue sections.
General notes	This product is a recombinant rabbit monoclonal antibody. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMab® patents

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	PBS 49%,Sodium azide 0.01%,Glycerol 50%,BSA 0.05%
Purity	Tissue culture supernatant
Clonality	Monoclonal
Clone number	EPR2217Y
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab68234** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★☆	1/5000 - 1/10000. Detects a band of approximately 41 kDa (predicted molecular weight: 41 kDa).
IHC-P	★★★★☆	1/100 - 1/250.
ICC		1/100 - 1/250.

Application notes Is unsuitable for Flow Cyt or IP.

Target

Function Calcium/calmodulin-dependent protein kinase that operates in the calcium-triggered CaMKK-CaMK1 signaling cascade and, upon calcium influx, regulates transcription activators activity, cell cycle, hormone production, cell differentiation, actin filament organization and neurite outgrowth. Recognizes the substrate consensus sequence [MVLIF]-x-R-x(2)-[ST]-x(3)-[MVLIF]. Regulates axonal extension and growth cone motility in hippocampal and cerebellar nerve cells. Upon NMDA receptor-mediated Ca(2+) elevation, promotes dendritic growth in hippocampal neurons and is essential in synapses for full long-term potentiation (LTP) and ERK2-dependent translational activation. Downstream of NMDA receptors, promotes the formation of spines and synapses in hippocampal neurons by phosphorylating ARHGEF7/BETAPIX on 'Ser-694', which results in the enhancement of ARHGEF7 activity and activation of RAC1. Promotes neuronal differentiation and neurite outgrowth by activation and phosphorylation of MARK2 on 'Ser-91', 'Ser-92', 'Ser-93' and 'Ser-294'. Promotes nuclear export of HDAC5 and binding to 14-3-3 by phosphorylation of 'Ser-259' and 'Ser-498' in the regulation of muscle cell differentiation. Regulates NUMB-mediated endocytosis by phosphorylation of NUMB on 'Ser-276' and 'Ser-295'. Involved in the regulation of basal and estrogen-stimulated migration of medulloblastoma cells through ARHGEF7/BETAPIX phosphorylation (By similarity). Is required for proper activation of cyclin-D1/CDK4 complex during G1 progression in diploid fibroblasts. Plays a role in K(+) and ANG2-mediated regulation of the aldosterone synthase (CYP11B2) to produce aldosterone in the adrenal cortex. Phosphorylates EIF4G3/eIF4GII. In vitro phosphorylates CREB1, ATF1, CFTR, MYL9 and SYN1/synapsin I.

Tissue specificity Widely expressed. Expressed in cells of the zona glomerulosa of the adrenal cortex.

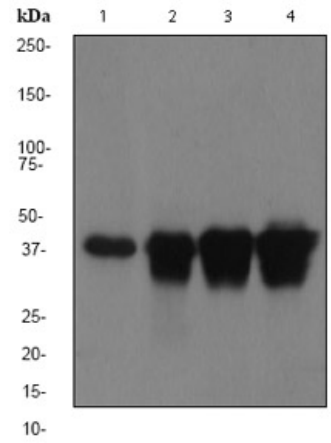
Sequence similarities Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. CaMK subfamily.
Contains 1 protein kinase domain.

Domain The autoinhibitory domain overlaps with the calmodulin binding region and interacts in the inactive folded state with the catalytic domain as a pseudosubstrate.

Post-translational modifications Phosphorylated by CaMKK1 and CaMKK2 on Thr-177.
Polybiquitinated by the E3 ubiquitin-protein ligase complex SCF(FBXL12), leading to proteasomal degradation.

Cellular localization Cytoplasm. Nucleus. Predominantly cytoplasmic.

Images



Western blot - Anti-CaMKI antibody [EPR2217Y] (ab68234)

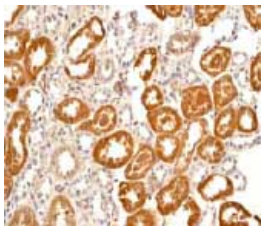
All lanes : Anti-CaMKI antibody [EPR2217Y] (ab68234) at 1/5000 dilution

Lane 1 : SH-SY5Y lysate
Lane 2 : human brain tissue lysate
Lane 3 : mouse brain tissue lysate
Lane 4 : rat brain tissue lysate

Lysates/proteins at 10 µg per lane.

Secondary
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size : 41 kDa
Observed band size : 41 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CaMKI antibody [EPR2217Y] (ab68234)

ab68234 at 1/100-1/250 dilution staining CaMKI in human kidney tissue sections.

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