

# Anti-CaMKI antibody [EPR2217Y] - BSA and Azide free ab239859

Recombinant RabMAb

4 Images

### Overview

Product name	Anti-CaMKI antibody [EPR2217Y] - BSA and Azide free
Description	Rabbit monoclonal [EPR2217Y] to CaMKI - BSA and Azide free
Host species	Rabbit
Tested applications	<b>Suitable for:</b> IHC-P, WB <b>Unsuitable for:</b> Flow Cyt or IP
Species reactivity	<b>Reacts with:</b> Mouse, Rat, Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate, Human brain tissue lysate, Mouse brain tissue lysate , NIH/3T3 (Mouse embryonic fibroblast), Rat brain tissue lysate, PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate
General notes	ab239859 is the carrier-free version of <a href="#">ab68234</a> .

Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.

This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

This product is compatible with the Maxpar<sup>®</sup> Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar<sup>®</sup> is a trademark of Fluidigm Canada Inc.

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

For more information [see here](#).

Our RabMAb<sup>®</sup> 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. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR2217Y
Isotype	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab239859 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
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
WB		1/1000. Detects a band of approximately 41 kDa (predicted molecular weight: 41 kDa).

**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.

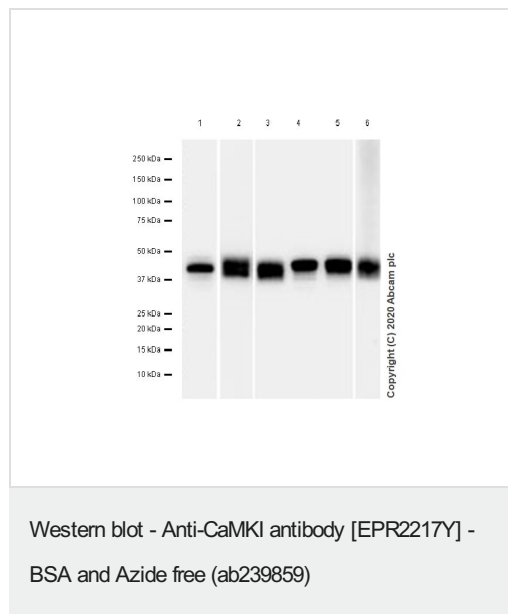
#### Post-translational modifications

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

#### Cellular localization

Cytoplasm. Nucleus. Predominantly cytoplasmic.

### Images



**All lanes :** Anti-CaMKI antibody [EPR2217Y] ([ab68234](#))

**Lane 1 :** HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate

**Lane 2 :** Human brain tissue lysate

**Lane 3 :** Mouse brain tissue lysate

**Lane 4 :** NIH/3T3 (Mouse embryonic fibroblast)

**Lane 5 :** Rat brain tissue lysate

**Lane 6 :** PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysate

Lysates/proteins at 40 µg per lane.

#### Secondary

**All lanes :** Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

**Predicted band size:** 41 kDa

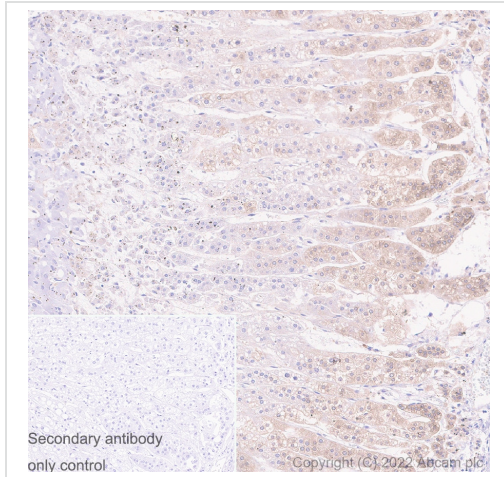
**Observed band size:** 41 kDa

**Exposure time:** Lane 1 & 3, 4, 5: 5 seconds. Lane 2 & 6: 20 seconds

**Blocking and diluting buffer:** 5% NFDM /TBST

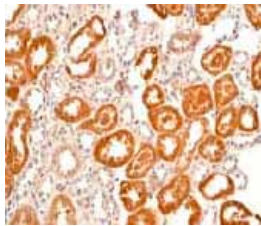
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and

sodium azide (**ab68234**).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CaMKI antibody [EPR2217Y] - BSA and Azide free (ab239859)

Immunohistochemical analysis of Paraffin-embedded Human adrenal gland tissue labelling CaMKI with **ab68234** at 1/500 dilution, followed by ready to use secondary antibody Goat Anti-Rabbit IgG H&L (HRP polymer). Positive staining on the zona glomerulosa of human adrenal glands. The section was incubated with **ab68234** at +4°C overnight. Counter stained with Hematoxylin.



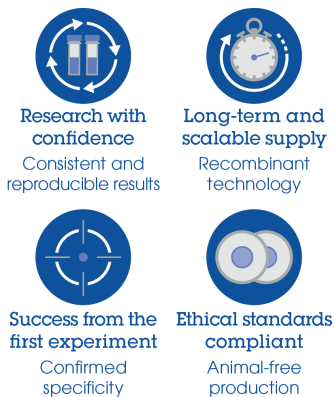
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CaMKI antibody [EPR2217Y] - BSA and Azide free (ab239859)

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab68234**).

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

#### Why choose a recombinant antibody?



Anti-CaMKI antibody [EPR2217Y] - BSA and Azide free (ab239859)

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