

# Anti-CaMKII alpha (phospho T286) antibody ab5683

★★★★★ [6 Abreviews](#) [50 References](#) [4 图像](#)

### 概述

<b>产品名称</b>	Anti-CaMKII alpha (phospho T286)抗体
<b>描述</b>	兔多克隆抗体to CaMKII alpha (phospho T286)
<b>宿主</b>	Rabbit
<b>特异性</b>	It does cross-react with CAMKII beta protein
<b>经测试应用</b>	<b>适用于:</b> IHC-FoFr, ICC/IF, WB
<b>种属反应性</b>	<b>与反应:</b> Rat
<b>免疫原</b>	Synthetic peptide corresponding to CaMKII alpha (phospho T286).
<b>常规说明</b>	

Calcium/calmodulin-dependent protein kinase II alpha (CaM Kinase II alpha) is a 50 kDa member of CaM Kinase II family of serine-threonine kinases that transduce Ca<sup>2+</sup> signals to several target proteins, including ion channels and transcription activators. CaM Kinase II is predominantly expressed in two isoforms in the brain: alpha and beta. CaM Kinase II plays an important role in neuronal plasticity and memory formation, and exerts both calcium-calmodulin-dependent and -independent activities. Autophosphorylation of CaM Kinase II alpha on threonine 286 allows the kinase to switch from a calmodulin-dependent to a calmodulin-independent state, and is required for various cellular functions including hippocampal long-term potentiation (LTP), spatial learning, and hippocampus-dependent memory.

The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.

If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

### 性能

<b>形式</b>	Liquid
<b>存放说明</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
<b>存储溶液</b>	pH: 7.30

Preservative: 0.05% Sodium azide  
Constituents: PBS, 50% Glycerol, 0.1% BSA

**纯度** Immunogen affinity purified

**纯化说明** The antibody has been negatively preadsorbed using a non-phosphopeptide corresponding to the site of phosphorylation to remove antibody that is reactive with non-phosphorylated CaM Kinase II alpha. The final product is generated by affinity chromatography using a CaM Kinase II alpha-derived peptide that is phosphorylated at threonine 286.

**Primary antibody说明** Calcium/calmodulin-dependent protein kinase II alpha (CaM Kinase II alpha) is a 50 kDa member of CaM Kinase II family of serine-threonine kinases that transduce Ca<sup>2+</sup> signals to several target proteins, including ion channels and transcription activators. CaM Kinase II is predominantly expressed in two isoforms in the brain: alpha and beta. CaM Kinase II plays an important role in neuronal plasticity and memory formation, and exerts both calcium-calmodulin-dependent and -independent activities. Autophosphorylation of CaM Kinase II alpha on threonine 286 allows the kinase to switch from a calmodulin-dependent to a calmodulin-independent state, and is required for various cellular functions including hippocampal long-term potentiation (LTP), spatial learning, and hippocampus-dependent memory.

**克隆** 多克隆

**同种型** IgG

## 应用

**The Abpromise guarantee** **Abpromise™**承诺保证使用ab5683于以下的经测试应用

“应用说明”部分下显示的仅为推荐的起始稀释度；实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
IHC-FoFr		1/300.
ICC/IF		Use a concentration of 5 µg/ml.
WB	★★★★★ (4)	1/1000. Detects a band of approximately 50 kDa.

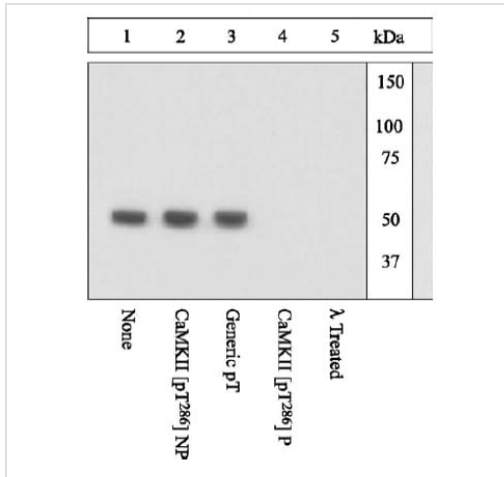
## 靶标

**功能** 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.

**序列相似性** Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. CaMK subfamily. Contains 1 protein kinase domain.

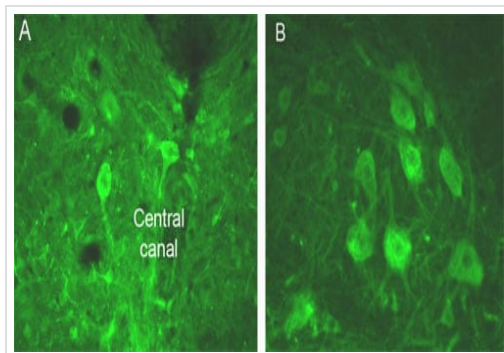
**细胞定位** Cell junction > synapse > presynaptic cell membrane. Cell junction > synapse. Postsynaptic lipid rafts.

## 图片



Western blot - Anti-CaMKII alpha (phospho T286) antibody (ab5683)

Peptide Competition and Phosphatase Treatment: Rat brain lysates were resolved by SDS-PAGE on a 10% polyacrylamide gel and transferred to PVDF. Membranes were either left untreated (1-4) or treated with lambda (λ) phosphatase (5) and blocked with a 5% BSA-TBST buffer for one hour at room temperature, then incubated with ab5683 antibody for two hours at room temperature in a 3% BSA-TBST buffer, following prior incubation with: no peptide (1, 5), the non-phosphopeptide corresponding to the immunogen (2), a generic phosphothreonine-containing peptide (3), or, the phosphopeptide immunogen (4). After washing, membranes were incubated with goat F(ab')<sub>2</sub> anti-rabbit IgG HRP conjugate and bands were detected using the Pierce SuperSignal method. The data show that only the peptide corresponding to CaM Kinase II alpha [pT286] blocks the antibody signal. The data also show that phosphatase stripping eliminates the signal, verifying that the antibody is phospho-specific. Peptide Competiti

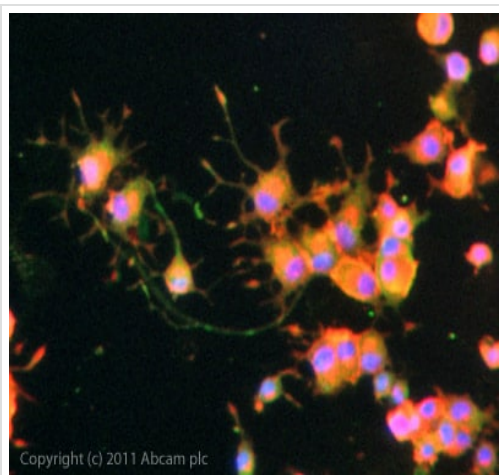


Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-CaMKII alpha (phospho T286) antibody (ab5683)

This image is courtesy of Sophie Pezet, Univ London Kings Coll, United Kingdom

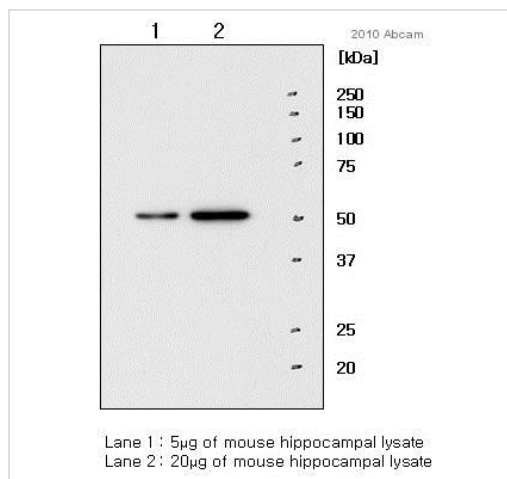
Immunofluorescent staining for CaMKII alpha phospho (T286) using ab5683 (1/300, incubated for 18 hours) in rat spinal cord. To induce CaMKII alpha phospho (T286) protein expression, a noxious stimulus was administered to the rat 5 minutes prior to 4% PFA perfusion fixation (this is a known paradigm for inducing phosphorylation CaMKII in some spinal neurons). The resulting immunofluorescent staining for CaMKII alpha phospho (T286) protein is observed in the cytoplasm of many dorsal horn spinal neurons (surrounding the central canal [A] or in the ventral horn [B]). Omission of primary antibody resulted in a lack of staining (data not shown).

Protocol details: Tissue was prepared by 4% paraformaldehyde cardiac perfusion fixation. Tissue was frozen on dry ice and then embedded in OCT compound and cut on cryostat. An antigen retrieval step was not necessary for the IHC protocol.



Immunocytochemistry/ Immunofluorescence - Anti-CaMKII alpha (phospho T286) antibody (ab5683)

ICC/IF image of ab5683 stained PC12 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab5683, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Western blot - Anti-CaMKII alpha (phospho T286) antibody (ab5683)

This image is courtesy of an Abreview submitted by Dr. Byung-il Choi

Primary Antibody 1/1000 24 hours at 4°C  
Secondary Antibody (1/5000): HRP-conjugated Goat polyclonal to rabbit IgG  
Blocking step: 5% BSA for 12 hours at 4°C

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