

## Anti-phospho-CAMK2A/2B (Thr286)

Rabbit Polyclonal Antibody

Catalog # C11-65R

Lot # J1274-8

### Cited Applications

WB

Suggested Dilutions:

WB 1:1,000

Ideal working dilutions for each application should be empirically determined by the investigator.

### Specificity

Recognizes the CAM2KA/2B protein phosphorylated at threonine 286

### Cross Reactivity

Human, Mouse, Rat and Xenopus

### Host/Isotype/Clone#

Rabbit, IgG

### Immunogen

Synthetic phospho-peptide corresponding to amino acid residues surrounding Thr286 conjugated to KLH

### Formulation

100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol.

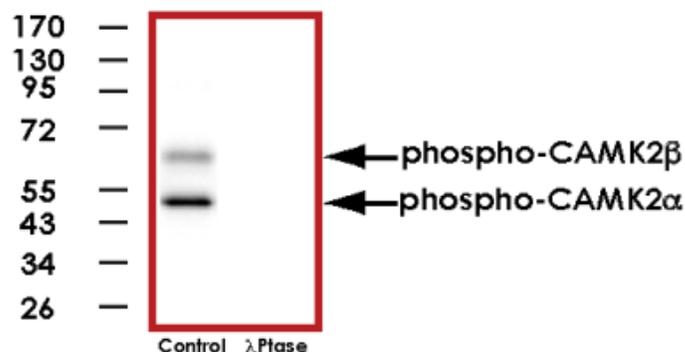
### Scientific Background

Ca<sup>2+</sup>/calmodulin-dependent protein kinase II (CAMK2) is a multi-functional calcium and calmodulin-dependent serine/threonine kinase that mediates cellular responses to a wide variety of intercellular signals (1). CAMK2 is abundant in the brain and has been shown to regulate diverse cellular functions including synaptic plasticity, neurotransmitter synthesis and release, gene expression, ion channel function, carbohydrate metabolism, cytoskeletal function, and Ca<sup>2+</sup>-homeostasis (2,3). Phosphorylation of Thr286 produces an autonomously active form of CAMK2 (4). Autophosphorylation of Thr305 inhibits the activity CAMK2, which leads to reduced localization to the postsynaptic density and consequently reduced neuronal plasticity and capacity for learning (5).

### References

- Kennedy, M B.: Signal transduction molecules at the glutamatergic postsynaptic membrane. 1998 Brain Res Rev 1998 26:243-257.
- Gleason, M R. et al: Translocation of CaM kinase II to synaptic sites in vivo. Nature Neurosci 2003 6:217-218.
- Hudmon, A. et al: Neuronal Ca<sup>2+</sup>/calmodulin-dependent protein kinase II: The role of structure and autoregulation in cellular function. Annu Rev Biochem 2002 71:473-510.
- Meng, F J. et al: Autophosphorylated calcium/calmodulin-dependent protein kinase IIa (CaMKIIa) reversibly targets to and phosphorylates N-methyl-D-aspartate receptor subunit 2B (NR2B) in cerebral ischemia and reperfusion in hippocampus of rats. Brain Res 2003 967:161-169.
- Elgersma, Y. et al: Inhibitory autophosphorylation of CaMKII controls PSD association, plasticity, and learning. Neuron 200236:493-505.

### Sample Data



Western blot of rat brain lysate showing specific immunolabeling of the ~50kDa CAMK2A and the ~60kDa CAMK2B phosphorylated at Thr<sup>286</sup> (Control). The phosphospecificity of this labeling is shown in the second lane (lambda-phosphatase: λ-Ptase). The blot is identical to the control except that it was incubated in λ-Ptase (1200 units for 30 min) before being exposed to the Anti-phospho-CAMK2A/2B (Thr286). The immunolabeling is completely eliminated by treatment with λ-Ptase.

## Anti-phospho-CAMK2A/2B (Thr286)

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Purification

Affinity chromatography

Stability

1yr at -20°C from date of shipment

Storage & Shipping

Store product at -20°C. For optimal storage, aliquot antibody into smaller quantities after centrifugation and store at recommended temperature. For optimal performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on ice packs.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: [orders@signalchem.com](mailto:orders@signalchem.com)  
[www.signalchem.com](http://www.signalchem.com)

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