Anti-Phospho-Thr\textsuperscript{306} CaM Kinase II

**Catalog Number:** p1005-306  
**Size:** 100 µl

**Product Description:** Affinity purified rabbit polyclonal antibody

**Applications:** WB: 1:1000

**Antigen:** Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr\textsuperscript{306} found in rat brain CaM Kinase II.

**Species reactivity:** The antibody has been directly tested for reactivity in Western blots with rat and mouse tissue. It is anticipated that the antibody will react with bovine, chicken, canine, human, *Xenopus* and zebra fish based on the fact that these species have 100% homology with the amino acid sequence used as antigen. The antibody should also recognize the δ CaM kinase II subunit based on sequence homology with the antigen.

**Biological Significance:** Ca\textsuperscript{2+}/Calmodulin-Dependent Protein Kinase II (CaM Kinase II) is a multifunctional calcium and calmodulin-dependent protein kinase that mediates cellular responses to a wide variety of intercellular signals (Kennedy, 1998; Schulman and Hanson, 1993). CaM Kinase II 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\textsuperscript{2+}-homeostasis (Gleason et al., 2003; Soderling, 2000; Hudmon and Schulman, 2002). Phosphorylation of Thr\textsuperscript{286} on the kinase produces an autonomously active form of CaM Kinase II (Meng et al., 2003; Picciotto et al., 1993). CaMKIIα autophosphorylation at Thr286 and Thr305/Thr306 has recently been shown to regulate kinase activity and modulate subcellular targeting and is critical for normal synaptic plasticity and learning and memory (Baucum et al., 2015).

**Western blot** of rat brain lysate showing specific immunolabeling of the ~50k α- and the ~60k β-CaM Kinase II phosphorylated at Thr\textsuperscript{306} (Control). Phosphospecificity is shown in the second lane (*lambda*-phosphatase: λ-Ptase). The blot is identical to the control except that the lysate was incubated in λ-Ptase (800 units/1mg protein for 30 min). The immunolabeling is completely eliminated by treatment with λ-Ptase.

**Packaging:** 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots

**Storage and Stability.** For long term storage –20°C is recommended. Stable at –20°C for at least 1 year.

**Shipment:** Domestic - Blue Ice; International – Blue Ice or Dry Ice.
Purification Method: Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity: Specific for the ~50k α-CaM Kinase II and the ~60k β-CaM Kinase II proteins phosphorylated at Thr$^{306}$. Immunolabeling is completely eliminated by lambda-phosphatase treatment. It has been reported that this antibody may recognize some level of non-phosphorylated pure recombinant protein, but in our hands (as shown in our WB image above) in native tissue, the antibody reacts in a phospho-specific manner.

Quality Control Tests: Western blots performed on each lot.

References: