

Phospho-CaMKII (Thr286) (D21E4) Rabbit mAb

✓ 100 µl
(10 western blots)



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rev. 09/30/13

For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez Gene ID #815, 816, 817, 818
UniProt ID #Q9UQM7, Q13554, Q13557, Q1355

Applications W Endogenous	Species Cross-Reactivity* H, M, R	Molecular Wt. 60, 50 kDa	Isotype Rabbit IgG**
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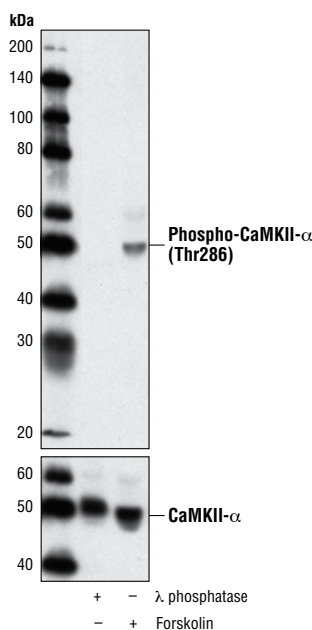
Background: CaMKII is an important member of the calcium/calmodulin-activated protein kinase family, functioning in neural synaptic stimulation and T cell receptor signaling (1,2). CaMKII has catalytic and regulatory domains. Ca²⁺/calmodulin binding to the CaMKII regulatory domain relieves autoinhibition and activates the kinase (3). The activated CaMKII further autophosphorylates at Thr286 to render the kinase constitutively active (3). The threonine phosphorylation state of CaMKII can be regulated through PP1/PKA. PP1 (protein phosphatase 1) dephosphorylates phospho-CaMKII at Thr286. PKA (protein kinase A) prevents phospho-CaMKII (Thr286) dephosphorylation through an inhibitory effect on PP1 (4).

Specificity/Sensitivity: Phospho-CaMKII (Thr286) (D21E4) Rabbit mAb recognizes endogenous levels of CamKII-α protein only when phosphorylated at Thr286. This antibody also recognizes endogenous levels of CamKII-β and CamKII-γ protein only when phosphorylated at Thr287.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr287 of human CamKII-β protein.

Background References:

- (1) Hughes, K. et al. (2001) *J Biol Chem* 276, 36008-13.
- (2) Barria, A. et al. (1997) *Science* 276, 2042-2045.
- (3) Barkai, U. et al. (2000) *Mol. Endocrinol.* 14, 554-563.
- (4) Makhinson, M. et al. (1999) *J Neurosci* 19, 2500-10.



Western blot analysis of extracts from MKN-45 cells treated with λ-phosphatase or Forskolin #3828 (30 µM, 20 min) using Phospho-CaMKII (Thr286) (D21E4) Rabbit mAb (upper) and CaMKII-α (D10C11) Rabbit mAb #11945 (lower).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

***Species cross-reactivity is determined by western blot.**

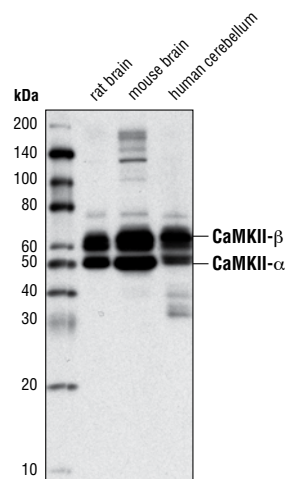
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting 1:1000

For product specific protocols please see the web page for this product at www.cellsignaling.com.

Please visit www.cellsignaling.com for a complete listing of recommended companion products.

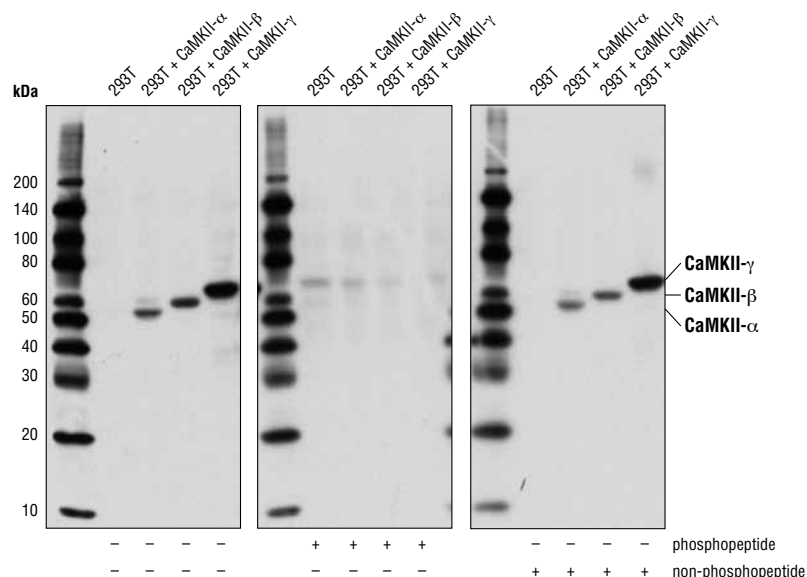


Western blot analysis of extracts from rat brain, mouse brain and human cerebellum using Phospho-CaMKII (Thr286) (D21E4) Rabbit mAb.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Western blot analysis of extracts from 293T cells, untransfected or transfected with specific CamKII proteins as indicated, using Phospho-CamKII (Thr286) (D21E4) Rabbit mAb. Antibody phosphospecificity was verified by preincubating the antibody in the absence of a peptide (-) or with either CamKII-α (Thr287) phosphopeptide (+) or CamKII-α (Thr287) non-phosphopeptide (+) prior to incubating the membrane.