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CaMKII- $\alpha$  AntibodyCell Signaling  
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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R	Endogenous	50	Rabbit	#Q9UQM7	815

<b>Product Usage Information</b>	<b>Application</b> Western Blotting	<b>Dilution</b> 1:1000
<b>Storage</b>	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 $\mu$ g/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.	
<b>Specificity / Sensitivity</b>	CaMKII- $\alpha$ Antibody detects endogenous levels of total CaMKII- $\alpha$ . The peptide sequence used as the antigen is not conserved in CaMKII- $\beta$ , - $\gamma$ and - $\delta$ .	
<b>Source / Purification</b>	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Tyr436 of human CaMKII- $\alpha$ . Antibodies are purified by protein A and peptide affinity chromatography.	
<b>Background</b>	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. Ca <sup>2+</sup> /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).	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Hughes, K. et al. (2001) <i>J Biol Chem</i> 276, 36008-13.</li> <li>2. Barria, A. et al. (1997) <i>Science</i> 276, 2042-5.</li> <li>3. Barkai, U. et al. (2000) <i>Mol Endocrinol</i> 14, 554-63.</li> <li>4. Makhinson, M. et al. (1999) <i>J Neurosci</i> 19, 2500-10.</li> </ol>	

<b>Species Reactivity</b>	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
<b>Western Blot Buffer</b>	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
<b>Applications Key</b>	<b>WB:</b> Western Blotting
<b>Cross-Reactivity Key</b>	<b>H:</b> human <b>M:</b> mouse <b>R:</b> rat <b>Hm:</b> hamster <b>Mk:</b> monkey <b>Vir:</b> virus <b>Mi:</b> mink <b>C:</b> chicken <b>Dm:</b> D. melanogaster <b>X:</b> Xenopus <b>Z:</b> zebrafish <b>B:</b> bovine <b>Dg:</b> dog <b>Pg:</b> pig <b>Sc:</b> S. cerevisiae <b>Ce:</b> C. elegans <b>Hr:</b> horse <b>GP:</b> Guinea Pig <b>Rab:</b> rabbit <b>All:</b> all species expected
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