Revision 4

Phospho-CaMKII (Tyr231) Antibody

#3356 Store at -20C

Cell Signaling TECHNOLOGY®

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Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	R	Endogenous	50	Rabbit	#Q13554, #Q13557, #Q13555, #Q9UQM7	816, 817, 818, 815

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

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

Specificity/Sensitivity

Phospho-CaMKII (Tyr231) Antibody detects endogenous levels of CaMKII only when phosphorylated at Tyr231.

Species predicted to react based on 100% sequence homology

Human

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr231 of human CaMKII. Antibodies are purified by protein A and peptide affinity chromatography.

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. Ca^{2+}/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).

Phospho-CaMKII (Tyr231) Antibody is directed against a previously unpublished CaMKII tyrosine phosphorylation site at Tyr231 that was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's MS/MS platform for phosphorylation site discovery. Phosphorylation of CamKII at Tyr231 was observed in extracts isolated from ischemic rat brain.

Background References

1. Hughes, K. et al. (2001) *J Biol Chem* 276, 36008-13.
2. Barria, A. et al. (1997) *Science* 276, 2042-5.
3. Barkai, U. et al. (2000) *Mol Endocrinol* 14, 554-63.
4. Makhinson, M. et al. (1999) *J Neurosci* 19, 2500-10.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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.

Applications Key

W: Western Blotting

Cross-Reactivity Key

R: Rat

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Limited Uses

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