

Phospho-CaMKII (Tyr231) Antibody

✓ Small 100 µl
(10 western blots)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #815, 816, 817
Swiss-Prot Acc. #Q9UQM7, Q13554, Q13557, Q9UL21

| Applications W Endogenous | Species Cross-Reactivity* R, (H) | Molecular Wt. 50 kDa | Source Rabbit** |
|---------------------------------|-------------------------------------|-------------------------|--------------------|
|---------------------------------|-------------------------------------|-------------------------|--------------------|

Background: CaMKII is an important member of calcium/calmodulin-activated protein kinase family, functioning in neural synaptic stimulation and T-cell receptor signaling (1,2). CaMKII has catalytic and regulatory domains. The binding of Ca²⁺/calmodulin to its regulatory domain releases its autoinhibitory effect 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 this dephosphorylation through its inhibitory effect on PP1 (4).

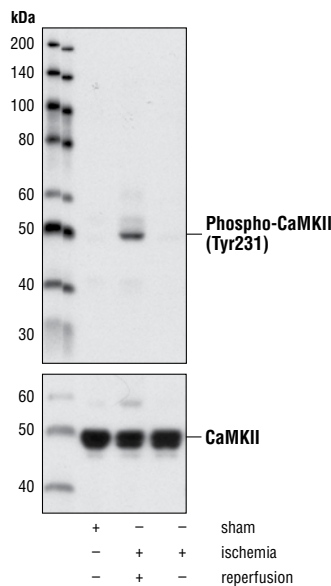
Phospho-CaMKII (Tyr231) is directed against a previously unpublished CaMKII tyrosine phosphorylation site at Tyr231 that was identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's MS/MS platform for phosphorylation site discovery. Phosphorylation of CaMKII at Tyr231 was observed in extracts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

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

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 References:

- (1) Hughes, K. et al. (2001) *J. Biol. Chem.* 276, 36008–36013.
- (2) Barria, A. et al. (1997) *Science* 276, 2042–2045.
- (3) Means, A.R. (2000) *Mol. Endocrinol.* 14, 4–12.
- (4) Makhinson, M. et al. (1999) *J. Neurosci.* 19, 2500–2510.



Western blot analysis of extracts from rat brain, either sham-operated, 15 min ischemia followed by 4 h reperfusion or 15 min ischemia only, using Phospho-CaMKII (Tyr231) Antibody (upper) or CaMKII Antibody (lower).

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.

*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 application specific protocols please see the web page for this product at www.cellsignal.com.

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

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.