

Store at  
-20°C  
#50049**CaMKII-α (6G9) Mouse mAb**
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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IHC-P, IF-F, IF-IC	H M R	Endogenous	50	Mouse IgG1	#Q9UQM7	815

**Product Usage Information****Application**

Western Blotting  
Immunohistochemistry (Paraffin)  
Immunofluorescence (Frozen)  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:400 - 1:1600  
1:50 - 1:200  
1:400 - 1:1600

**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.

For a carrier free (BSA and azide free) version of this product see product #92284.

**Specificity/Sensitivity**

CaMKII-α (6G9) Mouse mAb recognizes endogenous levels of total CaMKII-α protein. This antibody does not cross-react with CaMKII-β or CaMKII-δ proteins.

**Source / Purification Background**

Monoclonal antibody is produced by immunizing animals with a partially purified rat CaMKII-α protein.

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).

**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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IHC-P:** Immunohistochemistry (Paraffin) **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat

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