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Store at -20C
#3365

CaMKI- δ Antibody

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W	Reactivity: H R	Sensitivity: Endogenous	MW (kDa): 43	Source/Isotype: Rabbit	UniProt ID: #Q8IU85	Entrez-Gene Id: 57118
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Product Usage Information

Application

Western Blotting

Dilution

1:1000

Storage

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

Specificity/Sensitivity

CaMKI- δ Antibody detects endogenous levels of total CamKI- δ protein. This antibody may detect other isoforms of CaMKI.

Species predicted to react based on 100% sequence homology

Mouse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to human CaMKI- δ . Antibodies are purified by peptide affinity chromatography.

Background

The Ca²⁺/calmodulin-dependent kinase (CaMK) family, which is activated in response to elevation of intracellular Ca²⁺, includes CaMKI, CaMKII, CaMKIV, and CaMK-kinases (CaMKKs) (1,2). CaMKI is a downstream substrate of CaMKK and has 4 isoforms: CaMKI- α , CaMKI- β , CaMKI- γ , and CaMKI- δ . CaMKI is present in most cell types and may be involved in cellular functions, including transcription, cytoskeletal organization, axonal growth cone motility, and long-term potentiation in neurons (3-6). CaMKII is also ubiquitously expressed in most cell types. While muscular CaMKII has been linked to activation of mitochondrial biogenesis in muscle hypertrophy response, neuronal CaMKII regulates important neuronal functions, including neurotransmitter synthesis, neurotransmitter release, modulation of ion channel activity, cellular transport, cell morphology and neurite extension, synaptic plasticity, learning and memory, and gene expression (7). Like CaMKI, CaMKIV is also a substrate of CaMKKs and is primarily restricted to the nucleus of neurons. CaMKIV regulates gene transcription in neurons through phosphorylation of transcription factors such as CREB and is required for fear memory (8).

CaMKI- δ translocates to the nucleus upon intracellular Ca²⁺ influx and is activated through phosphorylation of Thr180 by CaMKK (9).

Background References

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- Mizuno, K. and Giese, K.P. (2005) *J. Pharmacol. Sci.* 98, 191-197.
- Wayman, G.A. et al. (2004) *J. Neurosci.* 24, 3786-3794.
- Gardner, H.P. et al. (2000) *Genomics* 63, 279-288.
- Verploegen, S. et al. (2005) *Blood* 106, 1076-1083.
- Takemoto-Kimura, S. et al. (2003) *J. Biol. Chem.* 278, 18597-18605.
- Yamauchi, T. (2005) *Biol. Pharm. Bull.* 28, 1342-1354.
- Wei, F. et al. (2002) *Nat. Neurosci.* 5, 573-579.
- Sakagami, H. et al. (2005) *Eur. J. Neurosci.* 22, 2697-2707.

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

H: Human **R:** Rat

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