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Mouse Camk2d Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP13799c

Product Information

Application	WB, IHC-P, E
Primary Accession	Q6PHZ2
Other Accession	Q9DG02, P15791, O77708, Q95266, Q13557, Q5ZKI0, Q2HJF7, P11275, P11798, Q9UQM7, Q6DGS3, Q6DEH3, NP_001020609.1, NP_076302.1
Reactivity	Human, Rat, Mouse
Predicted	Zebrafish, Rat, Bovine, Chicken, Pig, Rabbit, Xenopus, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34171
Calculated MW	56369
Antigen Region	221-250

Additional Information

Gene ID	108058
Other Names	Calcium/calmodulin-dependent protein kinase type II subunit delta, CaM kinase II subunit delta, CaMK-II subunit delta, Camk2d, Kiaa4163
Target/Specificity	This Mouse Camk2d antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 221-250 amino acids from the Central region of mouse Camk2d.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Camk2d Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Camk2d
Synonyms	Kiaa4163

Function	Calcium/calmodulin-dependent protein kinase involved in the regulation of Ca(2+) homeostatis and excitation-contraction coupling (ECC) in heart by targeting ion channels, transporters and accessory proteins involved in Ca(2+) influx into the myocyte, Ca(2+) release from the sarcoplasmic reticulum (SR), SR Ca(2+) uptake and Na(+) and K(+) channel transport (PubMed:12676814, PubMed:15456698, PubMed:17124532). Targets also transcription factors and signaling molecules to regulate heart function. In its activated form, is involved in the pathogenesis of dilated cardiomyopathy and heart failure (PubMed:12676814, PubMed:19179290, PubMed:19381018). Contributes to cardiac decompensation and heart failure by regulating SR Ca(2+) release via direct phosphorylation of RYR2 Ca(2+) channel on 'Ser-2808' (PubMed:20194790). In the nucleus, phosphorylates the MEF2 repressor HDAC4, promoting its nuclear export and binding to 14-3-3 protein, and expression of MEF2 and genes involved in the hypertrophic program. Is essential for left ventricular remodeling responses to myocardial infarction (PubMed:15793582). In pathological myocardial remodeling acts downstream of the beta adrenergic receptor signaling cascade to regulate key proteins involved in ECC. Regulates Ca(2+) influx to myocytes by binding and phosphorylating the L-type Ca(2+) channel subunit beta-2 CACNB2. In addition to Ca(2+) channels, can target and regulate the cardiac sarcolemmal Na(+) channel Nav1.5/SCN5A and the K+ channel Kv4.3/KCND3, which contribute to arrhythmogenesis in heart failure (PubMed:17124532). Phosphorylates phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2, contributing to the enhancement of SR Ca(2+) uptake that may be important in frequency- dependent acceleration of relaxation (FDAR) and maintenance of contractile function during acidosis. May participate in the modulation of skeletal muscle function in response to exercise, by regulating SR Ca(2+) transport through phosphorylation of PLN/PLB and triadin, a ryanodine receptor-coupling factor. In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK-STAT signaling pathway (PubMed:11972023).
Cellular Location	Cell membrane, sarcolemma; Peripheral membrane protein; Cytoplasmic side. Sarcoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side
Tissue Location	Expressed in cardiac muscle and skeletal muscle. Isoform Delta 2, isoform Delta 6, isoform Delta 6 and isoform Delta 10 are expressed in cardiac muscle. Isoform Delta 2 is expressed in skeletal muscle.

Background

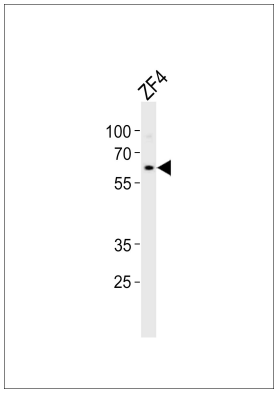
CaM-kinase II (CAMK2) is a prominent kinase in the central nervous system that may function in long-term potentiation and neurotransmitter release (By similarity).

References

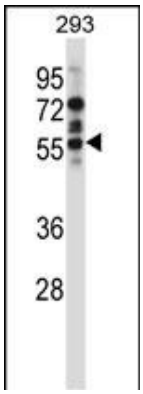
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Toko, H., et al. Circulation 122(9):891-899(2010)
Kushnir, A., et al. Proc. Natl. Acad. Sci. U.S.A. 107(22):10274-10279(2010)
Mangmool, S., et al. J. Cell Biol. 189(3):573-587(2010)
Koval, O.M., et al. Proc. Natl. Acad. Sci. U.S.A. 107(11):4996-5000(2010)

Images

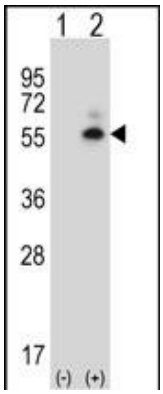
Western blot analysis of lysate from ZF4 cell line, using



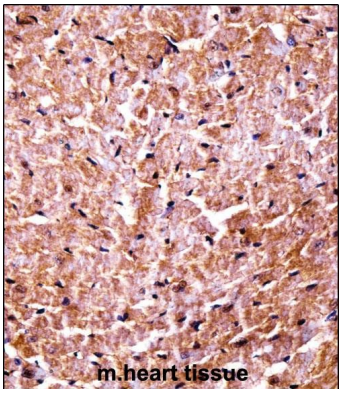
(DANRE) camk2d2 Antibody(Cat. #AP13799c). AP13799c was diluted at 1:1000. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 35ug.



Mouse Camk2d Antibody (Center) (Cat. #AP13799c) western blot analysis in 293 cell line lysates (35ug/lane).This demonstrates the Camk2d antibody detected the Camk2d protein (arrow).



Western blot analysis of Camk2d (arrow) using rabbit polyclonal Mouse Camk2d Antibody (Center) (Cat. #AP13799c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the Camk2d gene.



Mouse Camk2d Antibody (Center) (AP13799c)immunohistochemistry analysis in formalin fixed and paraffin embedded mouse heart tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of Mouse Camk2d Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

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