10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CAMK2D (CAMK2 delta) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7209a

Product Information

Application	IHC-P, WB, E
Primary Accession	Q13557
Other Accession	O77708, Q95266, Q6PHZ2
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Rabbit, Pig, Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1259
Calculated MW	56369
Antigen Region	448-478

Additional Information

Gene ID	817
Other Names	Calcium/calmodulin-dependent protein kinase type II subunit delta, CaM kinase II subunit delta, CaMK-II subunit delta, CAMK2D, CAMKD
Target/Specificity	This CAMK2D (CAMK2 delta) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 448-478 amino acids from the C-terminal region of human CAMK2D (CAMK2 delta).
Dilution	IHC-P~~1:100~500 WB~~1:1000 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	CAMK2D (CAMK2 delta) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CAMK2D
Synonyms	CAMKD

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. 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. Contributes to cardiac decompensation and heart failure by regulating SR Ca(2+) release via direct phosphorylation of RYR2 Ca(2+) channel on 'Ser-2808'. 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 (PubMed:17179159). Is essential for left ventricular remodeling responses to myocardial infarction. 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. 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 (PubMed:16690701). 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 (By similarity).
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 3, isoform Delta 2, isoform Delta 8 and isoform Delta 9 are expressed in cardiac muscle. Isoform Delta 11 is expressed in skeletal muscle.

Background

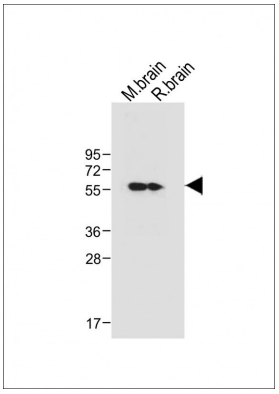
CaM-kinase II (CAMK2) is a prominent Ser/Thr protein kinase in the central nervous system that may function in long-term potentiation and neurotransmitter release. Likely autophosphorylation of Thr-286 allows the kinase to switch from a calmodulin-dependent to a calmodulin-independent state. CAMK2 is composed of four different chains: alpha, beta, gamma, and delta. The different isoforms assemble into homo- or heteromultimeric holoenzymes composed of 8 to 12 subunits. Expression of CAMK2 delta is significantly increased in patients suffering from dilated cardiomyopathy.

References

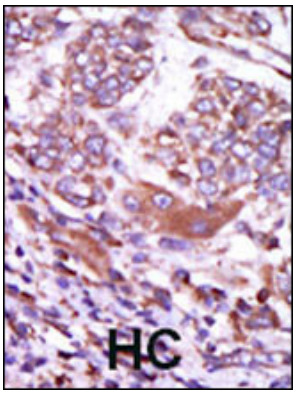
Rochlitz, H., et al., Diabetologia 43(4):465-473 (2000).
Hoch, B., et al., Circ. Res. 84(6):713-721 (1999).
Tombes, R.M., et al., Biochim. Biophys. Acta 1355(3):281-292 (1997).

Images

All lanes : Anti-CAMK2D (CAMK2 delta) Antibody (C-term)



at 1:1000 dilution Lane 1: Mouse brain tissue lysate Lane 2: Rat brain tissue lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 56 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.