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CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide

Synthetic peptide
Catalog # BP7209a

Specification

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - Product Information

Primary Accession Q13557

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - 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
The synthetic peptide sequence used to generate the antibody AP7209a was selected from the C-term region of human CAMK2 delta . A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - 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.

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - Images

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - 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.

CAMK2D (CAMK2 delta) Antibody (C-term) Blocking peptide - 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).