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Product datasheet for MR230211

Camk2d (NM_001293664) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Camk2d (NM_001293664) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Camk2d
Synonyms:	2810011D23Rik; 8030469K03Rik; CaMK II; [d]-CaMKII
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin

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ORF Nucleotide Sequence:

>MR230211 representing NM_001293664
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCTTCGACCACCACCTGCACCCGGTTCACCGACGAGTATCAGCTCTTTGAGGAGCTCGGAAAGGGGG
CGTTCTCAGTGGTGAGAAGATGTATGAAAATCCCTACTGGACAAGAGTATGCTGCCAAAATTATCAACAC
CAAAAAGCTTTCTGCTAGGGACCATCAGAAACTGGAAAGGGAAGCTAGAATCTGCCGTCTCTTGAAGCAC
CCCAATATTGTGAGACTTCACGACAGTATATCGGAGGAGGGCTTCCATTACTTGGTGTTTGACTTAGTGA
CTGGTGGCGAACTGTTTGAAGACATAGTGGCAAGAGAATATTACAGTGAAGCTGATGCCAGTCATTGTAT
ACAACAGATTCTAGAGAGTGTAAATCATTGTCACCTAAATGGCATAGTTCACAGGGACCTGAAGCCTGAG
AATTTGCTTTTAGCTAGCAAGTCCAAAGGAGCAGCTGTGAAGCTGGCAGACTTCGGCTTAGCCATAGAAG
TTCAAGGCGACCAGCAGGCATGGTTTGGTTTTGCTGGCACACCTGGGTATCTTTCTCCAGAAGTCCTGCG
TAAAGATCCTTATGGAAAACCAGTGGATATGTGGGCATGCGGTGTCATCCTCTACATCTTGCTGGTGGGA
TACCCACCCTTCTGGGATGAAGATCAGCATAGACTGTATCAGCAGATCAAGGCCGGAGCTTACGATTTTC
CGTCACCAGAATGGGATACAGTGACACCTGAAGCCAAAGACCTCATCAACAAAATGCTGACCATCAACCC
TGCCAAACGTATCACAGCCTCTGAGGCCCTGAAACACCCATGGATCTGTCAACGCTCTACTGTTGCCTCC
ATGATGCACAGGCAGGAGACTGTAGACTGCTTGAAGAAATTTAATGCTAGACGGAAACTGAAGGGCGCCA
TCTTGACAACTATGCTGGCTACGAGAAATTTTTCAGCAGCCAAGAGTTTATTGAAGAAACCAGATGGGGT
AAAGGAGCCCCAAACTACTGTAATCCACAACCCTGACGGAAACAAGGAGTCAACTGAGAGCTCAAACACC
ACCATTGAGGATGAAGACGTGAAAGCACGAAAACAGGAGATCATCAAAGTCACTGAGCAACTGATTGAAG
CTATCAACAATGGGGACTTTGAGGCTTACACAAAAATCTGTGATCCAGGCCTCACTGCCTTTGAACCTGA
AGCATTGGGCAACTTAGTGGAAGGGATGGACTTTCACAGATTCTACTTTGAAAATGCTTTGTCCAAAAGC
AATAAACCAATCCACACGATCATCCTCAACCCACACGTTCACCTGGTAGGGGATGACGCAGCCTGCATCG
CATACATTCGGCTCACACAGTACATGGACGGAAGCGGGATGCCAAAGACCATGCAGTCAGAAGAGACGCG
CGTGTGGCACCGCCGTGATGGGAAGTGGCAGAATGTTCACTTTCACCGTTCGGGGTCCCCCACAGTACCC
ATCAAC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

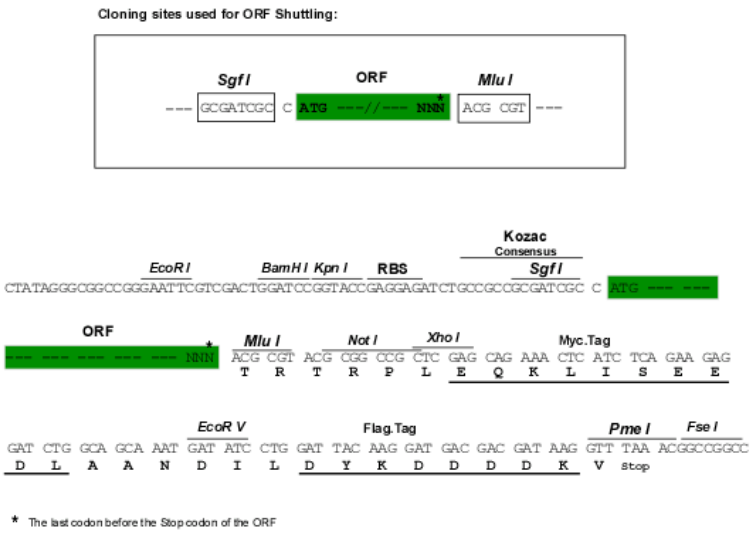
>MR230211 representing NM_001293664
Red=Cloning site Green=Tags(s)

MASTTTCTRFTDEYQLFEELGKGAFSVVRRCMKIPTGQEYAAKIINTKKLSARDHQKLEREARICRLLKH
PNIVRLHDSISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIQQILESVNHCHLNGIVHRDLKPE
NLLLASKSKGAAVKLADFGLAIEVQGDQQAWFGFAGTPGYLSPEVLRKDPYGKPVDMWACGVILYILLVG
YPPFWDEDQHRLYQQIKAGAYDFPSPEWDTVTPEAKDLINKMLTINPAKRITASEALKHPWICQRSTVAS
MMHRQETVDCLKKFNARRKLKGAILTTMLATRNFSAAKSLLKKPDGVKEPQTTVIHNPDGNKESTESSNT
TIEDEDVKARKQEIIKVTEQLIEAINNGDFEAYTKICDPGLTAFEPEALGNLVEGMDFHRFYFENALSKS
NKPIHTIILNPHVHLVGDDAACIAYIRLTQYMDGSGMPKTMQSEETRVWHRRDGKWQNVHFHRSGSPTVP
IN

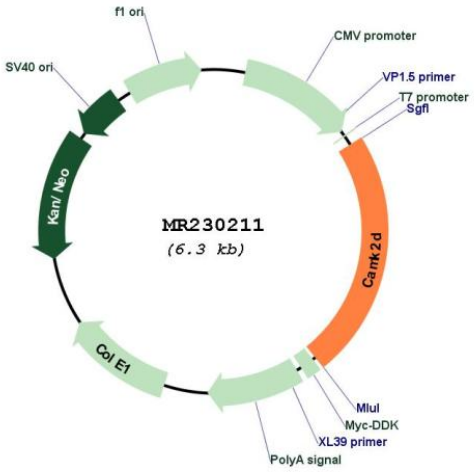
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN:	NM_001293664
ORF Size:	1476 bp
OTI Disclaimer:	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info
OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:	1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_001293664.1, NP_001280593.1
RefSeq Size:	5555 bp
RefSeq ORF:	1479 bp
Locus ID:	108058
UniProt ID:	Q6PHZ2
Cytogenetics:	3 G1
MW:	56.1 kDa
Gene Summary:	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. 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. 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.[UniProtKB/Swiss-Prot Function]