

## Product datasheet for MC227311

### Camk2d (NM\_001293665) Mouse Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Camk2d (NM_001293665) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Camk2d
Synonyms:	2810011D23Rik; 8030469K03Rik; CaMK II; [d]-CaMKII
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Fully Sequenced ORF:	>MC227311 representing NM_001293665 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGAAGGCATGTGAGCAGCCTGAGAATTTGCTTTAGCTAGCAAGTCAAAGGAGCAGCTGTGAAGCTGG  
CAGACTTCGGCTTAGCCATAGAAGTTCAAGGCGACCAGCAGGCATGGTTTGGTTTGTGGCACACCTGG  
GTATCTTTCTCCAGAAGTCTGCGTAAAGATCCTTATGGAAAACCAAGTGGATATGTGGGCATCGGGTGC  
ATCCTCTACATCTTGCTGGTGGGATACCCACCTTCTGGGATGAAGATCAGCATAGACTGTATCAGCAGA  
TCAAGGCCGGAGCTTACGATTTTCCGTCACCAGAATGGGATACAGTGACACCTGAAGCCAAAGACCTCAT  
CAACAAAATGCTGACCATCAACCCTGCCAAACGTATCACAGCCTCTGAGGCCCTGAAACACCCATGGATC  
TGTCACACGCTCTACTGTTGCCTCCATGATGCACAGGCAGGAGACTGTAGACTGCTTGAAGAAATTTAATG  
CTAGACGGAAACTGAAGGGCGCCATCTTGACAATATGCTGGCTACGAGAAATTTTTCAGCAGCCAAGAG  
TTTATTGAAGAAACCAGATGGGGTAAAGGAGTCAACTGAGAGCTCAAACACCACCATTGAGGATGAAGAC  
GTGAAAGCACGAAACAGGAGATCATCAAAGTCACTGAGCAACTGATTGAAGCTATCAACAATGGGGACT  
TTGAGGCTTACACAAAATCTGTGATCCAGGCCTCACTGCCTTTGAACCTGAAGCATTGGGCACTTAGT  
GGAAGGGATGGACTTTACAGATTCTACTTTGAAAATGCTTTGTCCAAAAGCAATAAACCAATCCACAG  
ATCATCTCAACCCACACGTTACCTGGTAGGGGATGACGAGCCTGCATCGCATACATTCGGCTCACAC  
AGTACATGGACGGAAGCGGGATGCCAAAGACCATGCAGTCAGAAGAGACGCGCGTGTGGCACCGCGGTGA  
TGGAAGTGGCAGAATGTTCACTTTACCGTTCCGGGTCCCCACAGTACCCATCAAGCCACCCTGTATT  
CCAAATGGGAAGAGAATTCTCAGGAGGCACCTCTTTGTGGCAAACAT**CTGA**

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI



[View online »](#)

<b>ACCN:</b>	NM_001293665
<b>Insert Size:</b>	1104 bp
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
<b>OTI Annotation:</b>	Clone contains native stop codon, and expresses the complete ORF without any c-terminal tag.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<u>NM_001293665.1, NP_001280594.1</u>
<b>RefSeq Size:</b>	5595 bp
<b>RefSeq ORF:</b>	1104 bp
<b>Locus ID:</b>	108058
<b>Cytogenetics:</b>	3 G1

**Gene Summary:**

Calcium/calmodulin-dependent protein kinase involved in the regulation of  $\text{Ca}^{2+}$  homeostasis and excitation-contraction coupling (ECC) in heart by targeting ion channels, transporters and accessory proteins involved in  $\text{Ca}^{2+}$  influx into the myocyte,  $\text{Ca}^{2+}$  release from the sarcoplasmic reticulum (SR), SR  $\text{Ca}^{2+}$  uptake and  $\text{Na}^{+}$  and  $\text{K}^{+}$  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  $\text{Ca}^{2+}$  release via direct phosphorylation of RYR2  $\text{Ca}^{2+}$  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  $\text{Ca}^{2+}$  influx to myocytes by binding and phosphorylating the L-type  $\text{Ca}^{2+}$  channel subunit beta-2 CACNB2. In addition to  $\text{Ca}^{2+}$  channels, can target and regulate the cardiac sarcolemmal  $\text{Na}^{+}$  channel Nav1.5/SCN5A and the  $\text{K}^{+}$  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  $\text{Ca}^{2+}$  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  $\text{Ca}^{2+}$  transport through phosphorylation of PLN/PLB and triadin, a ryanodine receptor-coupling factor.[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (6) has multiple differences compared to variant 1. These differences result in a different 5' UTR, cause translation initiation at an alternate start codon and result in a frameshift compared to variant 1. The encoded isoform (6) has distinct N- and C- termini, and is shorter compared to isoform 1. Sequence Note: This RefSeq record was created from transcript and genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.