

Product datasheet for MC204738

Camk2d (NM_001025438) Mouse Untagged Clone

Product data:

Product Type: Expression Plasmids
Product Name: Camk2d (NM_001025438) Mouse Untagged Clone
Tag: Tag Free
Symbol: Camk2d
Synonyms: 2810011D23Rik; 8030469K03Rik; CaMK II; [d]-CaMKII
Mammalian Cell Selection: Neomycin
Vector: PCMV6-Kan/Neo (PCMV6KN)
E. coli Selection: Kanamycin (25 ug/mL)

Fully Sequenced ORF: >BC052894
AAGAGGTAATCCGGGCGGCCCGGGTGACAGCGCGGGCGCCAGTCCCAGGGAAGCCAGGTCTGTTCCGG
TGTCGCCCCGTGCACTGTCCAGACCCCGCCATGGCTTCGACCACCACCTGCACCCGGTTCACCGACGAGT
ATCAGCTCTTTGAGGAGCTCGGAAAGGGGGCGTTCTCAGTGGTGAGAAGATGTATGAAAAATCCCTACTGG
ACAAGAGTATGCTGCCAAAATTACAACACCAAAAAGCTTTCTGCTAGGGACCATCAGAACTGGAAGG
GAAGCTAGAATCTGCCGTCTCTTGAAGCACCCCAATATTGTGAGACTTCATGACAGTATATCGGAGGAGG
GCTTCCACTACTTGGTGTGGTACTAGTACTGGTGGCGAACTGTTTGAAGACATAGTGGCAAGAGAATA
TTACAGTGAAGCTGATGCCAGTCATTGTATACAACAGATTCTAGAGAGTGTAAATCATTGTCACCTAAAT
GGCATAGTTCACAGGGACCTGAAGCCTGAGAATTTGCTTTTAGCTAGCAAGTCAAAGGAGCAGCTGTGA
AGCTGGCAGACTTCGGCTTAGCCATAGAAGTTCGAAGCGACCAGCAGGCATGGTTTGGTTTTGCTGGCAC
ACCTGGGTATCTTTCTCCAGAAGTCCTGGTAAAGATCCTTATGGAAAACCAAGTGGATATGTGGGCATGC
GGTGTATCCTCTACATCTTGGTGGGATACCCACCCTTCTGGGATGAAGATCAGCATAGACTGTATC
AGCAGATCAAGGCCGGAGCTTATGATTTCCGTCACCAGAATGGGATACAGTGACACCTGAAGCCAAAGA
CCTCATCAACAAAATGCTGACCATCAACCCTGCCAAAACGTATCACAGCCTCTGAGGCCCTGAAACACCCA
TGGATCTGTCAACGCTCTACTGTTGCCTCCATGATGCACAGGCAGGAGACTGTAGACTGCTTGAAGAAAT
TTAATGCTAGACGGAACCTGAAGGGCGCCATCTTGACAATATGCTGGCTACGAGAAATTTTTCAGCAGC
CAAGAGTTTATTGAAGAAACCAGATGGGGTAAAGGAGTCAACTGAGAGCTCAAACACCACCATTGAGGAT
GAAGACGTGAAAGCACGAAAACAGGAGATCATCAAAGTCACTGAGCAACTGATTGAAGCTATCAACAATG
GGGACTTTGAGGCTTACACAAAATCTGTGATCCAGGCCTCACTGCCTTTGAACCTGAAGCATTGGGTAA
CTTAGTGAAGGGATGGACTTTACAGATTCTACTTTGAAAATGCTTTGTCCAAAAGCAATAAACCAATC
CACACGATCATCCTCAACCCACACGTGCACCTGGTAGGGGACGATGCAGCCTGCATTGCATACATTCGGC
TCACACAGTACATGGACGGAAGCGGGATGCCAAAGACCATGCAGTCAAGAGAGACGCGGTGTGGCACCG
CCGTGATGGGAAGTGGCAGAATGTTCACTTTACCAGTTCGGGGTCCCCACAGTACCCATCAAGCCACCC
TGTATTCCAAATGGGAAAGAGAATCTCAGGAGGCACCTCTTTGTGGCAAAACATCTGAAAACATTCA
CATTTGGTCTTCTAATTGTCAACAGTGCCACTTCTTCTTCTGCTCAAGGCACCAGGCGGGTGTATCC
TGGGACGTCCTCTCCTCTTCATGCATGTTCTGAGTGCATGAAGTTGTGAAGTTCTACGTGAATGCAT
ATGTGACACGTCATCTTATCATGTGACACGTCATCTTATCATGTATTCTTCTCTGTACATTGTTTACACT



[View online »](#)

```

CCAGCTACCGGATGGGATGTTCCATGCAAACCTCGGTTACTGTTGGCTAACTCTAGAGGGAGCTCAGACA
AGAAAATCCACAATAACTCCAAGTTCAGCTGATCCGTCAGGTTTCTCTGTATGCCAAGATCCAAAAG
ACTTAATATAAATACTGTTCTCTGAATGACAGTGTGAAGGAAATCTTCAAGAATGCTGTCATTATTC
TCTTTGAGCTTTTTGTTGGGATTTGGGGTTTTGGGTTTTTTAGGTTTTTTTTCTTCACTTTAAAGGC
AAATACATATATGTATATGCCTCAGTTCCTGGTGTGCTCCTGATAGAAATGAATGGATGGCTTTCTCT
GACAGTGTGGTGTAGATAAATGGATGGTTATGTAAGCAAACCTCTGTGATCGTAGGAGCAAGAATC
ATTTGGTATTCTACCATCAAAGCCATGTTGATTTGGGTCAAACTATGATACTGGAAAAATTCACATCG
TTTACTAGTTTGATTGCTTTCAGACACACACAGTCCTGGTGAATGCTTGCCACTGATTTGGGTTTTCTT
TCTTAAGTCTGTGTTGTGTTTTAGTGTATACTATTTGCTCCATTTCTTTGTATTTGTTTTATTTTTCT
TTTTTTATCTTTCTCTCTCCCCCTTTCTCTCTCTTTCTTTTGTATTTATCTTTCTTCTATAGCT
GGTAGTATGTA AAAAGAAAAAAGTAACATTTGTATATGATTA AAAATAAAAATCAAGGCTTTTAGAGG
AAGCTAAAACAACTCCAGTCTCTCAGGGCTGTGGAGTTGTTAAATTTAAATAAATATTTAAATAA
AAGAAGAATAAAATTCAGCTTAAGCTACCATTTGTGCGTAGGTATCCTTGCTATGTGAAATTTGTTGAA
TTGTTGAGACTTATGCTAATAGCAGTAAAAGCCTACTATACTGACCTGGTTCGTCACAACTACAGAAATG
GAAGACCAAATGGAGTACAACCTGTGTACAACCTGGGTCAGAGGACATTTCTGCCTCACTTTCCTAGC
TAGCCATGTGAGGAGTAATCTCCATCTTCTAGAGGTTGAACTTGATCTTTGTGATTCTGCAGTTCTAG
CTTCTCTCTTGAGTCACAGTAGCATCTTCTGCCGGGAGTTAAGGCTTGCTAGCTTAAAACAAAGAGGA
AAAGGAAATGCCCCAGTTTTCTCTCGTCTCTGTTTCTCCTTTGTGATTTCGGTCCCTGGGAGGCTGTT
TCTCTGCGCTGAACTGCTTATGGTGCATGGAATATCCATCAGCGTTACCTCCACCATAGCTGCTCACAC
TCCTTAGAAGCCGATTTTTAAAGCAGAAGCAAAAAAGCAAAAACCTAAACACCCCTTCTCTTTTTCT
CATTTACCTTTTGGTGTGATTGCTAATCACTTTAGATATATTGTTGCTAGTGAATGTATGATAGATGG
TTGAAGCTTTTCTGATAATTATCATGATTTAAAACAATATATTTAAAACAAATATATACAGTAAAT
GTATTGAGCCGTGTAACCTGCCAATGAGATCTGTGAAAAAGTAATGGCCCTCACTTTCCCTTTTGATTT
CTTTTACCTTTCTGTGAAGCAGCTCTGCGTGGCATACTGATTTAAAACACAAATAGTGGTAGGATGG
TTTGGTTTTTTGTTTTTTGTTTTTTTTTTTACACTTTTAACTCAGCATGTGGTGTGGAAGAATTACC
ATAGATCCAGTTTGTCTTCTGCACTAAGATGTGAGGAAATCGTGATTTGTTCTCTCCAGCACAGTAAAT
TACACCTTCATCATCTTCTATTGTTTGGAAAACTGCAGTTTACCATGGGACACTGTATATATTCTTG
CCGTAATGGTAAATGACTGATTGATATATTTAAGAGTTAATAAATTTGTGATTTCTGCTGAAAAA AAAAAAAAAA

```

- Restriction Sites:** RsrII-NotI
- ACCN:** NM_001025438
- Insert Size:** 1500 bp
- OTI Disclaimer:** 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).
- 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:** [BC052894](#), [AAH52894](#)

RefSeq Size: 3795 bp

RefSeq ORF: 1500 bp

Locus ID: 108058

UniProt ID: [Q6PHZ2](#)

Cytogenetics: 3 G1

Gene Summary: Calcium/calmodulin-dependent protein kinase involved in the regulation of Ca(2+) homeostasis 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]

Transcript Variant: This variant (2) differs in the 3' UTR, and has multiple differences in the coding region, resulting in a frameshift compared to variant 1. The encoded isoform (2) has a distinct C-terminus 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.