

## Product datasheet for RC219542

### CACNA2D2 (NM\_006030) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	CACNA2D2 (NM_006030) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CACNA2D2
Synonyms:	CACNA2D; CASVDD
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>RC219542 representing NM_006030 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGCGGTGCCGGCTCGGACCTGCGGCGCCTCTCGGCCCGGCCAGCGCGGACTGCGCGCCCTGGCCCG  
GCTGCGGCCCCACCCTGGCCCCGACCCGGCGCCGACGTCCGGGCCCGCGCCCGCTGTGGCTGCT  
GCTGCCGTTCTACCGCTGCTCGCGCCCGCGGCCCTCTGCCTACAGCTTCCCCAGCAGCACACGATG  
CAGCACTGGGCCCGCGTCTGGAGCAGGAGGTCGACGGCGTGATGCGGATTTTGGAGGCGTCCAGCAGC  
TCCGTGAGATTTACAAGGACAACCGGAACCTGTTGAGGTACAGGAGAATGAGCCTCAGAAGTTGGTGGA  
GAAGGTGGCAGGGGACATTGAGAGCCTTCTGGACAGGAAGGTGCAGGCCCTGAAGAGACTGGCTGATGCT  
GCAGAGAACTTCCAGAAAGCACACCGCTGGCAGGACAACATCAAGGAGGAAGACATCGTGTACTATGACG  
CCAAGGCTGACGCTGAGCTGGACGACCCGAGAGTGAGGATGTGGAAAGGGGGTCTAAGGCCAGCACCCCT  
AAGGCTGGACTTCATCGAGGACCCAACTTCAAGAACAAGGTCAACTATTCATACGCGGCTGTACAGATC  
CCTACGGACATCTACAAAGGCTCCACTGTCATCCTCAATGAGCTCAACTGGACAGAGGCCCTGGAGAATG  
TGTTTCATGGAAAACCGCAGACAAGACCCACACTGCTGTGGCAGGTCTTCGGCAGCGCCACAGGAGTCAC  
TCGCTACTACCCGGCCACCCCGTGGCGAGCCCCAAGAAGATCGACCTGTACGATGTCCGAAGGAGACCC  
TGGTATATCCAGGGGCTCGTACCCAAAGACATGGTCATCATCGTGGATGTGAGTGGCAGTGTGAGCG  
GCCTGACCCTGAAGCTGATGAAGACATCTGTCTGCGAGATGCTGGACACGCTGTCTGATGATGACTATGT  
GAATGTGGCCTCGTTCAACGAGAAGGCACAGCCTGTGTGATGCTTACACACCTGGTGCAGGCCAATGTG  
CGCAACAAGAAGGTGTTCAAGGAAGCTGTGAGGGCATGGTGGCCAAGGGCACCACAGGCTACAAGGCCG  
GCTTTGAGTATGCCTTTGACCAGCTGCAGAACTCCAACATCACTCGGGCCAACTGCAACAAGATGATCAT  
GATGTTACGGATGGTGGTGGAGACCGGTGCAGGACGCTTTGAGAAGTACAATTGGCCAAACCGGACG  
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GATGCACTGGGACTGGGGTTGGTGGTAACAGGGACCCCTCCCTGTTTTCAACCTGACACAGGATGGCCCTG



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GGGAAAAGAAGAACCAGCTGATCCTGGGCGTGATGGGCATTGACGTGGCTCTGAATGACATCAAGAGGCT  
 GACCCCAACTACACGCTTGGAGCCAACGGCTATGTGTTTGCATTGACCTGAACGGCTACGTGTTGCTG  
 CACCCCAATCTCAAGCCCAGACCACCAACTCCGGGAGCCTGTGACTCTGGACTTCTGGATGCGGAGC  
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 AACGTTGGTCAAGTCCCTGGATGAGAGGTACATAGATGAGGTGACACGGAACTACACCTGGGTGCCTATA  
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 AGGCAGCCTGTGCCCTCAGCCCCCTGGCAACCTGGGTGCTGCACCCCGGGTGTCTTTGTGCCACCGT  
 TGCAGATTTCTTAACCTGGCCTGGTGGACCTCTGCTGCCGCCTGGTCCCTGTCCAGCAGCTTCTCTAC  
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 GCAGTGGCTCATGAAACAGACCAGTACTACTCGGCTCGGTAACCGCTCTACAACGCCATCATCGA  
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 GAGAAGCCGCTGTGCAGCCAGTGCAGGCTGGCCGGCTGCTGCAGAAGGAGACGCATCGACGGCCCGG  
 AGCAGTGTGAGCTAGTGCAGAGACCGGATACCGGAGAGGCCGACATCTGCTTCCACTACAACCGGAC  
 AGAAGATACCTCAGACTGTGGCCGCGGGCCTCCTTCCCGCCGTCGCTGGGCGTCTGGTCTCCTGCAA  
 CTGCTGCTCCTCTGGGCTGCCGCCCGGCCGAGCCTCAAGTCTCGTCCACGCTCTCGCCGCTC

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RC219542 representing NM\_006030  
 Red=Cloning site Green=Tags(s)

MAVPARTCGASRPGPARTARWPWPGCPHPGPGTRRPTSGPPRPLWLLPLLLAAPGASAYSFPQQHTM  
 QHWARRLEQEVGVMRIFGGVQQLREIYKDNRNLFVQENEPQKLVEKVAGDIESLLDRKQVQALKRLADA  
 AENFQKAHRWQDNIKEEDIVYYDAKADAELDDPESEDVERGSKASTLRDLDFIEDPNFKNVNYSYAAVQI  
 PTDIYKGSTVILNELNWTEALENVFMENRRQDPTLLWQVFGSATGVTRYYPATPWRAPKKIDL YDVRRRP  
 WYIQGASSPKDMVIIVDVSGSVSGLTLKLMKTSVCEMLDTLSDDDYVNVASFNEKAQPVSCFTHLVQANV  
 RNKKVFKEAVQGMVAKGTTGYKAGFEYAFDQLQNSNITRANCNKMIMMFTDGGEDRVQDVFKEYNWFNRT  
 VRVFTFSVQGHNYDVTPQLQWMAKNGYFEIPSIGAIRINTQEYLDVLRPMLVAGKEAQVQWTVNVE  
 DALGLGLVVTGTLVPVFNLTQDGPGEKKNQLILGVMGIDVALNDIKRLTPNYTLGANGYVFAIDLNGYVLL  
 HPNLKPQTTNFREPVTLDFLDAELEDENKEEIRRSMDGNKGHKQIRTLVKSLDERYIDEVTRNYTWVPI  
 RSTNYSLGLVLPYSTFYLANLSDQILQVQYFEFLLPSSFSEGHVFIAPREYCKDLNASDNNTFLKN  
 FIELMEKVTPDSKQCNNFLLHNLILDGTITQQLVERVWRDQDLNTYSLLAVFAATDGGITRVFPNKAED  
 WTENPEPFNASFYRRSLDNHGYVFKPPHQDALLRPLELENDTVGILVSTAVELSLGRRTLRPVAVGVKLD  
 LEAWAEKFKVLASNRTHQDQPKCGPNSHCEMDCEVNNEDLLCVLIDDDGGFLVLSNQNHQWDQVGRFFSE  
 VDANLMLALYNNFYTRKESYDQAACAPPPGNLGAAPRGVFPVTVADFLNLAWWTSAAAWSLFQQLLY  
 GLIYHSWFQADPAEAEGSPETRESSCVMKQTQYYFGSVNASYNAIIDCGNCSRLFHAQRLTNTNLLFVVA  
 EKPLCSQCEAGRLLQKETHSDGPEQCELVQRPRYRRGPHICFDYNATEDTSDCGRGASFPPLSLGVLVSLQ  
 LLLLLGLPPRPQPQLVHASRRL

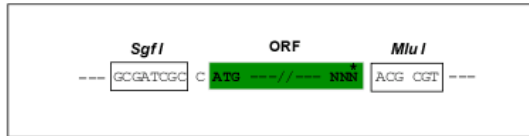
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

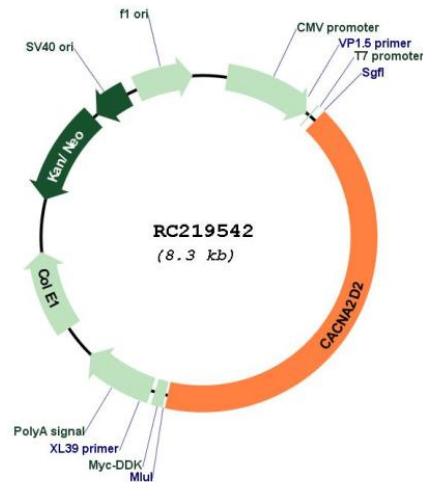
Cloning Scheme:

Cloning sites used for ORF Shuttling:



\* The last codon before the Stop codon of the ORF

## Plasmid Map:



ACCN: NM\_006030

ORF Size: 3429 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\\_006030.4](#)

RefSeq Size: 5337 bp

RefSeq ORF: 3432 bp

Locus ID: 9254

UniProt ID: [Q9NY47](#)

Cytogenetics: 3p21.31

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<b>Protein Families:</b>	Druggable Genome, Ion Channels: Other
<b>Protein Pathways:</b>	Arrhythmogenic right ventricular cardiomyopathy (ARVC), Cardiac muscle contraction, Dilated cardiomyopathy, Hypertrophic cardiomyopathy (HCM), MAPK signaling pathway
<b>MW:</b>	128.9 kDa
<b>Gene Summary:</b>	<p>Calcium channels mediate the entry of calcium ions into the cell upon membrane polarization. This gene encodes the alpha-2/delta subunit of the voltage-dependent calcium channel complex. The complex consists of the main channel-forming subunit alpha-1, and auxiliary subunits alpha-2/delta, beta, and gamma. The auxiliary subunits function in the assembly and membrane localization of the complex, and modulate calcium currents and channel activation/inactivation kinetics. The subunit encoded by this gene undergoes post-translational cleavage to yield the extracellular alpha2 peptide and a membrane-anchored delta polypeptide. This subunit is a receptor for the antiepileptic drug, gabapentin. Mutations in this gene are associated with early infantile epileptic encephalopathy. Single nucleotide polymorphisms in this gene are correlated with increased sensitivity to opioid drugs. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Mar 2014]</p>