

Product datasheet for **SC109000**

CAMK2A (NM_171825) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CAMK2A (NM_171825) Human Untagged Clone
Tag:	Tag Free
Symbol:	CAMK2A
Synonyms:	CAMKA; CaMKIIalpha; CaMKIINalpha; MRD53; MRT63
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL6</u>
E. coli Selection:	Ampicillin (100 ug/mL)



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Fully Sequenced ORF: >OriGene ORF within SC109000 sequence for NM_171825 edited (data generated by NextGen Sequencing)

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ATGGCCACCATCACCTGCACCCGCTTCACGGAAGAGTACCAGCTCTTCGAGGAATTGGGC
AAGGGAGCCTTCTCGGTGGTGCGAAGGTGTGTGAAGGTGCTGGCTGGCCAGGAGTATGCT
GCCAAGATCATCAACACAAAGAAGCTGTGAGCCAGAGACCATCAGAAGCTGGAGCGTGAA
GCCCGCATCTGCCGCTGCTGAAGCACCCCAACATCGTCCGACTACATGACAGCATCTCA
GAGGAGGGACACCACCTACCTGATCTTCGACCTGGTCACTGGTGGGGAAGTGTTTGAAGT
ATCGTGGCCCGGAGTATTACAGTGAGGCGGATGCCAGTCACTGTATCCAGCAGATCCTG
GAGGCTGTGCTGCACTGCCACCAGATGGGGTGGTGCACCGGGACCTGAAGCCTGAGAAT
CTGTTGCTGGCCTCCAAGCTCAAGGGTGCCGAGTGAAGCTGGCAGACTTTGGCCTGGCC
ATAGAGGTGGAGGGGAGCAGCAGGCATGGTTTGGGTTTGCAGGGACTCCTGGATATCTC
TCCCCAGAAGTGTGCGGAAGGACCCGTACGGGAAGCCTGTGGACCTGTGGGCTTGTGGG
GTCATCCTGTACATCCTGCTGGTGGGTACCCCGTCTGGGATGAGGACCAGCACCGC
CTGTACCAGCAGATCAAAGCCGGCGCTATGATTTCCCATCGCCGAATGGGACACTGTC
ACCCCGAAGCAAGGATCTGATCAATAAGATGCTGACCATTAACCCATCAAACGCATC
ACAGCTGCCGAAGCCCTTAAGCACCCCTGGATCTCGCACCGCTCCACCGTGGCATCCTGC
ATGCACAGACAGGAGACCGTGGACTGCCTGAAGAAGTTCAATGCCAGGAGAACTGAAG
GGAGCCATTCTCACACGATGCTGGCCACCAGGAATTCTCCGGAGGGAAGAGTGGGGGA
AACAAAGAGAGCGATGGTGTGAAGGAATCCTCAGAGAGCACCAACACCACCATCGAGGAT
GAAGACACCAAAGTGGGAAACAGGAAATTATAAAAGTGACAGAGCAGCTGATTGAAGCC
ATAAGCAATGGAGATTTTGTGCTACACGAAGATGTGCGACCCTGGCATGACAGCCTTC
GAACCTGAGGCCCTGGGAAACCTGGTTGAGGGCCTGGACTTCCATCGATTCTATTTTGA
AACCTGTGGTCCCGAAGCAGCAAGCCCGTGCACACCACCATCTGAATCCCCACATCCAC
CTGATGGGCGACAGTACGCTGCATCGCCTACATCCGCATCACGCAAGTACCTGGACGCT
GGCGCATCCACGCACCGCCAGTCCGAGGAGACCCGTGCTGGCACCGCCGGGATGGC
AAATGGCAGATCGTCCACTTCCACAGATCTGGGGCGCCCTCCGTCTGCCCACTGA

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Clone variation with respect to NM_171825.2

5' Read Nucleotide Sequence: >OriGene 5' read for NM_171825 unedited

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GGGGTGGGGGTTAAATAATANAATATAAANNNTTCTTTCCCGCCCGTTGCCGATTG
GGCGGTAGGCGTGTACGGTGGNGAGTCTATATAAGCAGAGCTCATTTAGGTGACACTATA
GAATACAAGCTACTTGTCTTTTTGACGCGCCGCGAATTCGGCACGAGGGTCAAGTCAA
CCGTTTCTCTGTTTGCACCTCGGCAGCACGGCAGGCAAGTGGTCCCTAGGTTCCGGAGCA
GAGCAGCAGCGCCTCAGTCTGGTCCCCAGTCCCAAGCCTCACCTGCCTGCCACGCGCC
AGGATGGCCACCATCACCTGCACCCGCTTACGGAAGAGTACCAGCTCTTCGAGGAATTG
GGCAAGGGAGCCTTCTCGGTGGTGCGAAGGTGTGTGAAGGTGCTGGCTGGCCAGGAGTAT
GCTGCCAAGATCATCAACACAAAGAAGCTGTGAGCCAGAGACCATCAGAAGCTGGAGCGT
GAAGCCCGCATCTGCCGCTGCTGAAGCACCCCAACATCGTCCGACTACATGACAGCATC
TCAGAGGAGGGACACCACTACCTGATCTTCGACCTGGTCACTGGTGGGAACTGTTTGA
GATATCGTGGCCCGGAGTATTACAGTGAGGCGGATGCCAGTCACTGTATCCAGCAGATC
CTGGAGGCTGTGCTGCACTGCCACCAGATGGGGTGGTGCACCGGGACCTGAAGCCTGAG
AATCTGTTGCTGGCCTCCAAGCTCAAGGGTGCCGAGTGAAGCTGGCAGACTTTGCCTG
GCCATAGAGGTGGAGGGGAGCACCAGGCATGTTTTGGGTTTGCAGGGACTCCTGGATAT
CTCTCCCAAAGTGTGCGGAAGGACCCGTACGGAAGCCTGTGGACCTGTGGCCTTGTGG
GGTCATCTGTATCCTGCTGTTGGGTCCCCCGTCTGGGATAG

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3' Read Nucleotide Sequence:	>OriGene 3' read for NM_171825 unedited AACCCCTAGGGATGGAAACTCCCCATTCCAGTATAGCACTGGGGNAGGGTCACAGGGCTGC CACCCGGGTTCTGTTCAGAAAAGCTATGACCGCGGCCGAATCTAGAGTCGAGTTTTTTTT TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGCACAAAAGTTTGTAGCTTTTTATTGCACT GAAAACACCAAGAATAAAACAAACGCCCTTTTTTTTATCCACCCCCCCCCAATAGCA AAAAGTTTGAGCAGTGTTCATTCAAGTTCACAGCCACCTTTTTTAAAAAAGAAAAGAAA AAAAAAAAGAACTTAAACAAAACCCCAACAAATTGTAACAAAGAAACCAGCACGGGGA GTCTGGCAAACATCCCCAAAAGGGTCTCCCTTTGAAGGGAGACAGGAGGCCTTGGGT CAGGATTCGCACCATGGTGGGCACAAACCCAGGAAAACACTTTCCTGTAAACGTGTTTTTC ATGCTGGAGCCAAGGTTTTGACTTGGGGTNGGATTTTTATTTATTTATTATTATTATTA TTATTATTTTCGCAACCAAGGATGTTTTGGAAGAACACAAATTTGTCTGGGGAGGGTAG GCTCTGGGCAAATTTTTCTGTGAATCTCCCTGCCTGGCGCATTAAAGATCATCCCTGGT CCCTGTGGTGGCACCAGGTGGCCTGCCACCCACAGCGGTGCCCTTACATGGGGCCAT TTTAGCCGTGGGGAAAGATTTGGCTCCACTTTTCTGGCACTTTGGAGATGGACCATTGG ACAAGGAGTGTGTTAACCCAATGAAGGGAAGGACCTCGAGCTCCTTCCACTTTATTTC TTTGGGGGGGAAAACCAAAACCCCAAAAAGGGGAAGGAATTGCG
Restriction Sites:	NotI-NotI
ACCN:	NM_171825
Insert Size:	4700 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:	<ol style="list-style-type: none"> 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:	<u>NM_171825.1</u> , <u>NP_741960.1</u>
RefSeq Size:	4803 bp
RefSeq ORF:	1437 bp
Locus ID:	815
UniProt ID:	<u>Q9UQM7</u>
Cytogenetics:	5q32
Protein Families:	Druggable Genome, Protein Kinase

Protein Pathways:	Calcium signaling pathway, ErbB signaling pathway, Glioma, GnRH signaling pathway, Long-term potentiation, Melanogenesis, Neurotrophin signaling pathway, Olfactory transduction, Oocyte meiosis, Wnt signaling pathway
Gene Summary:	<p>The product of this gene belongs to the serine/threonine protein kinases family, and to the Ca(2+)/calmodulin-dependent protein kinases subfamily. Calcium signaling is crucial for several aspects of plasticity at glutamatergic synapses. This calcium calmodulin-dependent protein kinase is composed of four different chains: alpha, beta, gamma, and delta. The alpha chain encoded by this gene is required for hippocampal long-term potentiation (LTP) and spatial learning. In addition to its calcium-calmodulin (CaM)-dependent activity, this protein can undergo autophosphorylation, resulting in CaM-independent activity. Several transcript variants encoding distinct isoforms have been identified for this gene. [provided by RefSeq, Jun 2018]</p> <p>Transcript Variant: This variant (2) differs in the 5' UTR and lacks an alternate in-frame exon compared to variant 3. The resulting isoform (2) has the same N- and C-termini but is shorter compared to isoform 1. Variants 2 and 4 both encode the same isoform (2). Isoforms 2 and 5 are the same length but differ in sequence. Sequence Note: The RefSeq transcript and protein were derived from transcript and genomic sequence to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on alignments.</p>