

Product datasheet for **RC218186**

CAMK2A (NM_015981) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CAMK2A (NM_015981) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	CAMK2A
Synonyms:	CAMKA; CaMKIIalpha; CaMKIINalpha; MRD53; MRT63
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>RC218186 representing NM_015981
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGGCCACCATCACCTGCACCCGCTTCACGGAAGAGTACCAGCTCTTCGAGGAATTGGGCAAGGGAGCCT
 TCTCGGTGGTGCGAAGGTGTGTGAAGGTGCTGGCTGGCCAGGAGTATGCTGCCAAGATCATCAACACAAA
 GAAGCTGTCAGCCAGAGACCATCAGAAGCTGGAGCGTGAAGCCCGCATCTGCCCGCTGCTGAAGCACCCC
 AACATCGTCCGACTACATGACAGCATCTCAGAGGAGGGACACCACTACCTGATCTTCGACCTGGTCACTG
 GTGGGAACTGTTTGAAGATATCGTGGCCCGGGAGTATTACAGTGAGGCGGATGCCAGTCACTGTATCCA
 GCAGATCTGGAGGCTGTGCTGCACTGCCACCAGATGGGGTGGTGCACCGGGACCTGAAGCCTGAGAAT
 CTGTTGCTGGCCTCCAAGCTCAAGGGTCCCGCAGTGAAGCTGGCAGACTTGGCCTGGCCATAGAGGTGG
 AGGGGAGCAGCAGGCATGGTTTGGTTTGCAGGGACTCTGGATATCTCTCCCAGAAGTCTGCGGAA
 GGACCCGTACGGGAAGCCTGTGGACCTGTGGGCTTGTGGGTCATCCTGTACATCCTGCTGGTTGGGTAC
 CCCCCGTTCTGGGATGAGGACCAGCACCCGCTGTACCAGCAGATCAAAGCCGGCGCTATGATTTCCCAT
 CGCCGGAATGGGACACTGTCACCCCGGAAGCAAGGATCTGATCAATAAGATGCTGACCATTAACCCATC
 CAAACGCATCACAGCTGCCGAAGCCCTTAAGCACCCCTGGATCTCGCACCGCTCCACCGTGGCATCCTGC
 ATGCACAGACAGGAGACCGTGGACTGCCTGAAGAAGTTCAATGCCAGGAGGAACTGAAGGGAGCCATTC
 TCACCACGATGCTGGCCACCAGAACTTCTCCGGAGGGAAGAGTGGGGGAAACAAGAAGAGCGATGGTGT
 GAAGAAAAGAAAGTCCAGTTCACGCTTCAGTTAATGGAATCCTCAGAGAGCACCAACACCACCATCGAG
 GATGAAGACACCAAGTGCAGAAACAGGAAATATAAAAGTGACAGAGCAGCTGATTGAAGCCATAAGCA
 ATGGAGATTTTGTGCTACACGAAGATGTGCGACCCCTGGCATGACAGCCTTCGAACCTGAGGCCCTGGG
 GAACCTGGTTGAGGGCCTGGACTTCATCGATTCTATTTTGAACCTGTGGTCCCGGAACAGCAAGCCC
 GTGCACACCACCATCCTGAATCCCCACATCCACCTGATGGGCGACGAGTCAAGCCTGCATCGCCTACATCC
 GCATCACGAGTACCTGGACGCTGGCGCATCCACGACCGCCAGTCCGAGGAGACCCGTGTCTGGCA
 CCGCCGGGATGGCAATGGCAGATCGTCCACTTCCACAGATCTGGGGCGCCCTCCGCTCTGCCCCAC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC218186 representing NM_015981
 Red=Cloning site Green=Tags(s)

MATITCTRFTTEEYQLFEELGKGAFSVVRRRCVKVLAGQEYAAKIINTKKSARDHQKLEREARICRLLKHP
 NIVRLHDSISEEGHHYLIFDLVTGGELFEDIVAREYYSEADASHCIQQILEAVLHCHQMGMVVHRDLKPEN
 LLLASKLKGAAVKLADFLAIEVEGEQQAWFGFAGTPGYLSPEVLRKDPYKPVDLWACGVILYILLVGY
 PPFWDEDQHRLYQQIKAGAYDFPSPEWDTVTPEAKDLINKMLTINPSKRITAAEALKHPWISHRSTVASC
 MHRQETVDCLKKFNARRKLGAILTTMLATRNFSGGKSGNKKSDGVKRRKSSSSVQLMESSESTNTTIE
 DEDTKVRKQEIIEIKVTEQLIEAISNGDFESYTKMCDPGMTAFEPEALGNLVEGLDFHRFYFENLWSRNSK
 VHTTILNPHIHLMGDESACIAYIRITQYLDAGGIPRTAQSEETRVWHRDQKQIIVHFHRS GAPSVLPH

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms:

https://cdn.origene.com/chromatograms/ja1879_a08.zip

Restriction Sites:

Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



* The last codon before the Stop codon of the ORF

ACCN: NM_015981

ORF Size: 1467 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_015981.4](#)
RefSeq Size: 4836 bp

RefSeq ORF: 1470 bp

Locus ID: 815

Cytogenetics: 5q32

Domains: pkinase, TyrKc, S_TKc

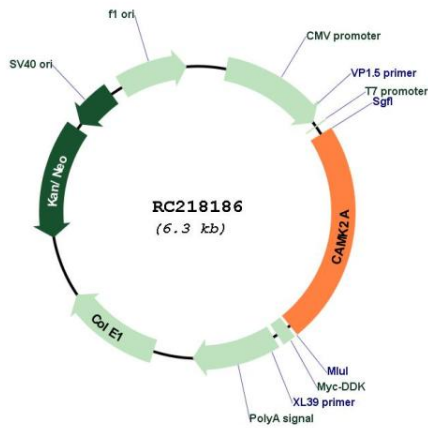
Protein Families: Druggable Genome, Protein Kinase

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

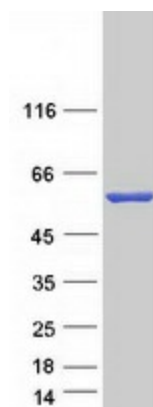
MW: 55.1 kDa

Gene Summary: 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]

Product images:



Circular map for RC218186



Coomassie blue staining of purified CAMK2A protein (Cat# [TP318186]). The protein was produced from HEK293T cells transfected with CAMK2A cDNA clone (Cat# RC218186) using MegaTran 2.0 (Cat# [TT210002]).