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Product datasheet for SC323453

CAMK2A (NM_015981) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	CAMK2A (NM_015981) Human Untagged Clone
Tag:	Tag Free
Symbol:	CAMK2A
Synonyms:	CAMKA; CaMKIIalpha; CaMKIINalpha; MRD53; MRT63
Mammalian Cell Selection:	None
Vector:	pCMV6-XL5
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>NCBI ORF sequence for NM_015981, the custom clone sequence may differ by one or more nucleotides

ATGGCCACCATCACCTGCACCCGCTTCACGGAAGAGTACCAGCTCTTCGAGGAATTGGGCAAGGGAGCCT
TCTCGGTGGTGCGAAGGTGTGTGAAGGTGCTGGCTGGCCAGGAGTATGCTGCCAAGATCATCAACACAAA
GAAGCTGTCAGCCAGAGACCATCAGAAGCTGGAGCGTGAAGCCCGCATCTGCCGCCTGCTGAAGCACCCC
AACATCGTCCGACTACATGACAGCATCTCAGAGGAGGGACACCACTACCTGATCTTCGACCTGGTCACTG
GTGGGGAACTGTTTGAAGATATCGTGGCCCGGGAGTATTACAGTGAGGCGGATGCCAGTCACTGTATCCA
GCAGATCCTGGAGGCTGTGCTGCACTGCCACCAGATGGGGGTGGTGCACCGGGACCTGAAGCCTGAGAAT
CTGTTGCTGGCCTCCAAGCTCAAGGGTGCCGCAGTGAAGCTGGCAGACTTTGGCCTGGCCATAGAGGTGG
AGGGGGAGCAGCAGGCATGGTTTGGGTTTGCAGGGACTCCTGGATATCTCTCCCCAGAAGTGCTGCGGAA
GGACCCGTACGGGAAGCCTGTGGACCTGTGGGCTTGTGGGGTCATCCTGTACATCCTGCTGGTTGGGTAC
CCCCCGTTCTGGGATGAGGACCAGCACCGCCTGTACCAGCAGATCAAAGCCGGCGCCTATGATTTCCCAT
CGCCGGAATGGGACACTGTCACCCCGGAAGCCAAGGATCTGATCAATAAGATGCTGACCATTAACCCATC
CAAACGCATCACAGCTGCCGAAGCCCTTAAGCACCCCTGGATCTCGCACCGCTCCACCGTGGCATCCTGC
ATGCACAGACAGGAGACCGTGGACTGCCTGAAGAAGTTCAATGCCAGGAGGAAACTGAAGGGAGCCATTC
TCACCACGATGCTGGCCACCAGGAACTTCTCCGGAGGGAAGAGTGGGGGAAACAAGAAGAGCGATGGTGT
GAAGAAAAGAAAGTCCAGTTCCAGCGTTCAGTTAATGGAATCCTCAGAGAGCACCAACACCACCATCGAG
GATGAAGACACCAAAGTGCGGAAACAGGAAATTATAAAAGTGACAGAGCAGCTGATTGAAGCCATAAGCA
ATGGAGATTTTGAGTCCTACACGAAGATGTGCGACCCTGGCATGACAGCCTTCGAACCTGAGGCCCTGGG
GAACCTGGTTGAGGGCCTGGACTTCCATCGATTCTATTTTGAAAACCTGTGGTCCCGGAACAGCAAGCCC
GTGCACACCACCATCCTGAATCCCCACATCCACCTGATGGGCGACGAGTCAGCCTGCATCGCCTACATCC
GCATCACGCAGTACCTGGACGCTGGCGGCATCCCACGCACCGCCCAGTCGGAGGAGACCCGTGTCTGGCA
CCGCCGGGATGGCAAATGGCAGATCGTCCACTTCCACAGATCTGGGGCGCCCTCCGTCCTGCCCCACTGA

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5' Read Nucleotide Sequence:

>OriGene 5' read for mutant NM_015981 unedited
CCCGCCGTTGAGCAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAA
CCGTCAGAATTTTGTAATACGACTCACTATAGGGCGGCCGCGAATTCGGCACGAGGCGGTTCTCTGTTTG
CACTCGGCAGCACGGGCAGGCAAGTGGTCCCTAGGTTCGGGAGCAGAGCAGCAGCGCCTCAGTCCTGGTC
CCCCAGTCCCAAGCCTCACCTGCCTGCCCAGCGCCAGGATGGCCACCATCACCTGCACCCGCTTCACGGA
AGAGTACCAGCTCTTCGAGGAATTGGGCAAGGGAGCCTTCTCGGTGGTGCGAAGGTGTGTGGAAGGTGGC
TTGGCTGCCCAGGAGTATGCTTGCCTTGAATCATTCAACAGGGAGTATGCCTGCCTGAATCATTCAACGG
GATATATGCTGCCATGGATCATTCACCAGAGAGTATGCTGCCATGATCATCAACCGGAATTATGCTGCCT
GAATCATCAACGGGTTTTGCGGACTGAATCATAAACGGGATTTTGCTCCCGGTTTCTTCCCCGGGTTTTT
CCTGCCTGGTTCTTCCCCGGGTTTTGGTGGCCGGGTTTCTCCCCGGGTTTTTTCCCCCGTGATCCTCACG
AGGATTCGGCCCCGATGTTCATCACCCCAAAACCTGGCCCCAAAACCCATAAAAACGGGCACGGAACCCC
CGCTTCCGCCCGCTGAAAACCCCCCATCGTCCGCTACTGTTACATCTTTAAAAGGGGGACCCCTACTCTG
TTTTCCACTGGTAGTGGGGGAAACTTTTAAAAACGGCGCGCGGTATATATTGTGGGGAGAGCCCTGTTTC
TCGATATCTGCGTGCTGCATCAGCCAATGGTGTGACGCGCGCGAACTCAAAATTTTGTCTCCACTACGGT
GCGCCCGATGACGACATGTCTGCCAAGATGAGAGACGACACACGCTGAGTCC

Kinase Domain Sequence:

>SC323453 kinase domain raw sequence. By performing BLASTX analysis with this sequence against NCBI refernce protein database, you can confirm the presence of the kinase-deficient mutation
CCAKGMGCAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTC
AGAATTTTGTAATACGACTCACTATAGGGCGGCCGCGAATTCGGCACGAGGCGGTTCTCTGTTTGCACTC
GGCAGCACGGGCAGGCAAGTGGTCCCTAGGTTCGGGAGCAGAGCAGCAGCGCCTCAGTCCTGGTCCCCCA
GTCCCAAGCCTCACCTGCCTGCCCAGCGCCAGGATGGCCACCATC

Restriction Sites: Please inquire

ACCN: NM_015981

Insert Size: 3000 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).

OTI Annotation: This kinase-deficient mutant clone was generated by created by site-directed mutagenesis from the corresponding wild-type clone. See details in "Application of active and kinase-deficient kinome collection for identification of kinases regulating hedgehog signaling." Cell. 2008 May p536-548.

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_015981.2, NP_057065.2

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
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] Transcript Variant: This variant (1) differs in the 5' UTR compared to variant 3. Variants 1 and 3 both encode the same isoform (1). 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.