

Product datasheet for **MG208679**

Camk2b (BC080273) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Camk2b (BC080273) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Camk2b
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG208679 representing BC080273
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCCACCACGGTGACCTGCACCCGTTTCACCGACGAGTACCAGCTATACGAGGATATTGGCAAGGGG
 CTTTCTCTGTGGTCCGACGCTGTGTCAAGCTCTGTACCGCCATGAGTATGCAGCCAAGATCATTAAATAC
 CAAGAAGCTGTCGGCCAGAGATCACCAGAACTGGAGAGAGAAGCTCGGATCTGCCGCTCTGTAAGCAT
 TCCAACATTGTACGCTCCATGACAGCATCTCTGAAGAGGGCTTCCACTACCTGGTCTTCGATCTGGTCA
 CTGGTGGGAGCTCTTTGAAGACATCGTGGCAAGAGAGTACTACAGTGAAGCTGATGCCAGTCACTGCAT
 CCAGCAGATCCTGGAAGCTGTTCTCCATTGTACCAAATGGGGTCTCCACAGAGACCTCAAGCCTGAG
 AACCTGCTCTGGCCAGCAAATGCAAAGGCGCCGAGTGAAGCTGGCAGACTTCGGCCTGGCCATCGAGG
 TTCAGGGAGACCAGCAGGCATGGTTGGATTTGCGGGAACGCCAGGCTACCTGTCTCCGAGGTCTTCCG
 GAAGGAGGCTACGGCAAACCTGTGGACATCTGGGCATGTGGGTGATCTGTATATCCTGCTGGTGGGC
 TACCCACCTTTCTGGGATGAGGACCAACAAGCTGTACCAGCAGATCAAGGCTGGGGCGTATGATTTC
 CATCCCCTGAGTGGGACACCGTTACTCCTGAAGCCAAAAACCTCATCAACCAGATGCTGACCATCAACCC
 TGCCAAGCGCATCACGGCCATGAGGCCCTGAAGCACCCATGGGTCTGCCAACGTTCCACCGTGGCCTCT
 ATGATGCACAGACAGGAGACTGTGGAATGTCTGAAGAAGTTCAATGCAAGGAGGAAGCTCAAGGGAGCCA
 TCCTCACCACTATGCTGGCCACACGGAATTTCTCAGCCAAGAGTTTACTCAACAAGAAAGCAGATGGAGT
 CAAGCCCCAGACAACAGCACAAAAACAGCTCGGCCATCACCAGCCCCAAAGGATCTCTCCCTCCTGT
 GCCCTGGAATCTCCGACAGCACCAACAACCATAGAGGATGAAGATGCCAAAGCCCCCAGGATCTCTG
 ACATCCTCAACTCAGTGAGGCGGGGCTCAGGGACCCAGAAGCTGAGGGCCTCCACCAGTGGGCCCCC
 ACCTGCCCCATCTCCGACTCTCCCTGGCCCTTGCCACCCCATCCCGGAAGCAGGAAATCATCAAGACC
 ACAGAGCAGCTCATTGAGGCCGCAACAATGGGGACTTTGAGGCCTATGCGAAAACTGTGACCCAGGCC
 TGACCTCATTTGAGCCTGAAGCTCTGGGCAACCTGGTCAAGGGATGGATTTCCACAGATTCTACTTTGA
 GAACCTGCTGGCCAAGAACAGCAAGCCGATCCACACCACCATCCTGAACCCGCACGTGCACGTCATTGGC
 GAGGATGCGGCATGCATCGCCTACATCCGCTCACACAGTACATCGATGGCCAGGGCAGACCCCGTACCA
 GCCAGTCCGAAGAGACCCGTGTGTGGCACCGCCGACGGCAAGTGGCAGAAATGTACATTTCCACTGCTC
 GGGCGCTCCAGTGGCCCCGCTGCAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

Protein Sequence:

>MG208679 representing BC080273
 Red=Cloning site Green=Tags(s)

MATTVTCTRFDEYQLYEDIGKGAFSVVRRCVKLCTGHEYAAKIINTKKLSARDHQKLEREARICRLLKH
 SNIVRLHDSISEEGFHLYVFDLVTGGELFEDIVAREYYSEADASHCIQQILEAVLHCHQMGMVHRDLKPE
 NLLLLASKCKGAAVKLADFLAIEVQGDQQAWFAGTPLYLSPEVLRKEAYGKPVDIWACGVILYILLVG
 YPPFWDEDQHKLYQIKAGAYDFPSPEWDTVTPEAKNLINQMLTINPAKRITAEALKHPWVCQRSTVAS
 MMHRQETVECLKKFNARRRLKGAITLTMATRNFSAKSLLNKKADGVKPKQTNSTKNSSAITSPKGSPPA
 ALESSDSTNTTIEDEDAKAPRISDILNSVRRSGTPEAEGLPPVPPPCPSPTLPGLPTPSRKQEI IKT
 TEQLIEAVNNGDFEAYAKICDPGLTSFEPEALGNLVEGMDFHRFYFENLLAKNSKPIHTTILNPHVHVIG
 EDAACIAYIRLTQYIDGQRPRTSQSEETRVWHRDRGKWQNVHFHCSGAPVAPLQ

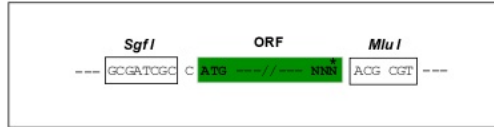
TRTRPLE - GFP Tag - V

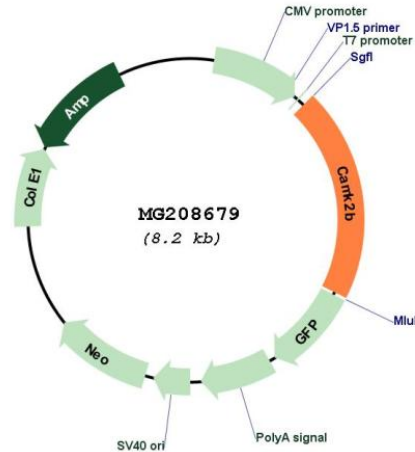
Restriction Sites:

Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:


ACCN: BC080273

ORF Size: 1637 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: [BC080273](#), [AAH80273](#)

RefSeq Size: 3827 bp

RefSeq ORF: 1637 bp

Locus ID: 12323

Cytogenetics: 11 3.89 cM

Gene Summary: Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca(2+) transport in skeletal muscle. In neurons, plays an essential structural role in the reorganization of the actin cytoskeleton during plasticity by binding and bundling actin filaments in a kinase-independent manner. This structural function is required for correct targeting of CaMK2A, which acts downstream of NMDAR to promote dendritic spine and synapse formation and maintain synaptic plasticity which enables long-term potentiation (LTP) and hippocampus-dependent learning. In developing hippocampal neurons, promotes arborization of the dendritic tree and in mature neurons, promotes dendritic remodeling. Also regulates the migration of developing neurons (PubMed:29100089). Participates in the modulation of skeletal muscle function in response to exercise. In slow-twitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca(2+) transport and in fast-twitch muscle participates in the control of Ca(2+) release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2 (PubMed:21752990).[UniProtKB/Swiss-Prot Function]