

Product datasheet for **MG221054**

Camk2b (NM_001174054) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Camk2b (NM_001174054) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Camk2b
Synonyms:	CaMKII
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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ORF Nucleotide Sequence:

>MG221054 representing NM_001174054
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCCACCACGGTGACCTGCACCCGTTTCACCGACGAGTACCAGCTATACGAGGATATTGGCAAGGGG
 CTTTCTCTGTGGTCCGACGCTGTGTCAAGCTCTGTACCGCCATGAGTATGCAGCCAAGATCATTAAATAC
 CAAGAAGCTGTCGGCCAGAGATACCAGAACTGGAGAGAGAAGCTCGGATCTGCCGCTCTGTAAGCAT
 TCCAACATTGTACGCTCCATGACAGCATCTCTGAAGAGGGCTTCCACTACCTGGTCTTCGATCTGGTCA
 CTGGTGGGGAGCTCTTTGAAGACATCGTGGCAAGAGAGTACTACAGTGAAGCTGATGCCAGTCACTGCAT
 CCAGCAGATCCTGGAAGCTGTTCTCCATTGTACCAAATGGGGTCTCCACAGAGACCTCAAGCCTGAG
 AACCTGCTTCTGGCCAGCAAATGCAAAGGCGCCGAGTGAAGCTGGCAGACTTCGGCTGGCCATCGAGG
 TTCAGGGAGACCAGCAGGCATGGTTTGGATTTGCGGGAACGCCAGGCTACCTGTCTCCGAGGTCTTTCG
 GAAGGAGGCTACGGCAAACCTGTGGACATCTGGGCATGTGGCCATTATGTTTGTCTGCCTGTGCTCATT
 ATAGGGGTGATCCTGTATATCCTGCTGGTGGGCTACCCACCTTTCTGGGATGAGGACCAACAAGCTGT
 ACCAGCAGATCAAGGCTGGGGCTATGATTTCCATCCCCTGAGTGGGACACCGTTACTCCTGAAGCCAA
 AAACCTCATCAACCAGATGCTGACCATCAACCCTGCCAAGCGCATCACGGCCATGAGGCCCTGAAGCAC
 CCATGGGTCTGCCAACGTTCCACCGTGGCTCTATGATGCACAGACAGGAGACTGTGGAATGTCTGAAGA
 AGTTCAATGCAAGGAGGAAGCTCAAGGGAGCCATCCTCACCCTATGCTGGCCACACGGAATTTCTCAGC
 AGCCAAGAGTTTACTCAACAAGAAAGCAGATGGAGTCAAGCCCCAGACAAACAGCACCAAAAACAGCTCG
 GCCATCACCAGCCCCAAGGATCTCCTCCTGCTGCCCTGGAGCCTCAAACCACCGTTATCCATAACC
 CAGTGGACGGGATTAAGGAATCTTCCGACAGACCAACAACAACCATAGAGGATGAAGATGCCAAAGCCCG
 GAAGCAGGAAATCATCAAGACCACAGAGCAGCTCATTGAGGCCGTCAACAATGGGGACTTTGAGGCCAT
 GCGAAAATCTGTGACCCAGGCTGACCTATTTGAGCCTGAAGCTCTGGGCAACCTGGTCAAGGGATGG
 ATTTCCACAGATTCTACTTTGAGAACCTGCTGGCCAAGAACAGCAAGCCGATCCACACCACCATCTGAA
 CCCGCACGTGCACGTATTGGCAGGATGCGGCATGCATCGCCTACATCCGCTCACACAGTACATCGAT
 GGCCAGGGCAGACCCCGTACCAGCCAGTCCGAAGAGACCCGTGTGTGGCACCGCCGACGGCAAGTGGC
 AGAATGTACATTTCCACTGCTCGGGCGCTCCAGTGGCCCCGCTGCAG

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

Protein Sequence:

>MG221054 representing NM_001174054
 Red=Cloning site Green=Tags(s)

MATTVTCTRFDTDEYQLYEDIGKGAFSVVRRCVKLCTGHEYAANKIINTKKLSARDHQKLEREARICRLLKH
 SNIVRLHDSISEEGFHLYVFDLVTGGELFEDIVAREYYSEADASHCIQQILEAVLHCHQMGGVVRDLKPE
 NLLLASKCKGAAVKLADFLAIEVQGDQAWFGFAGTPGYLSPEVLRKEAYGKPVDIWACGHYVCLPVL
 IGVILYILLVGYPPFWDEDQHKLYQQIKAGAYDFPSPEWDTVTPKLNINQMLTINPAKRITAHEALKH
 PWVCQRSTVASMMHRQETVECLKKFNARRKLGAILTTMLATRNFSAAKSLNKKADGVKPTNSTKNSS
 AITSPKGLSPPAALEPQTTVIHNPVDGIKESSDSTNTTIEDEDAKARKQEIIKTTEQLIEAVNNGDFEAY
 AKICDPGLTSFEPEALGNLVEGMDFHRFYFENLLAKNSKPIHTTILNPHVHVIGEDAACIAYIRLTQYID
 GQGRPRTSQSEETRVWHRDGGKQNVHFHCSGAPVAPLQ

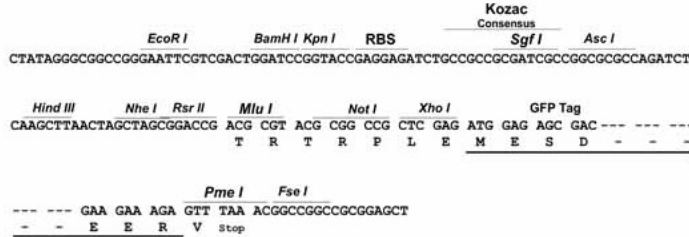
TRTRPLE – GFP Tag – V

Restriction Sites:

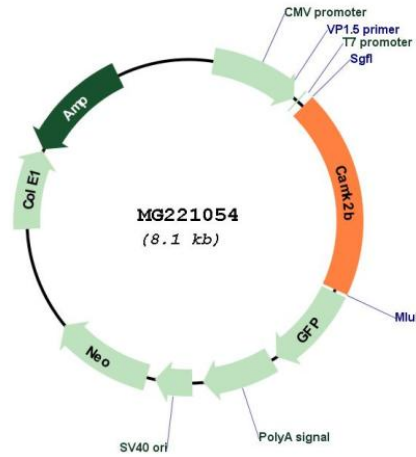
Sgfl-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN:	NM_001174054
ORF Size:	1587 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:	<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:	NM_001174054.1 , NP_001167525.1
RefSeq Size:	3986 bp
RefSeq ORF:	1590 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]