

## Product datasheet for **MG227294**

### Mark2 (NM\_007928) Mouse Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Mark2 (NM_007928) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Mark2
Synonyms:	Emk; EMK-1; Par-1; Par-1b
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG227294 representing NM\_007928  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGTCCAGCGCTCGGACCCCTACCCAGCTGAACGAAAGGGACACGGAGCAGCCACCTTGGGACACC  
 TTGATTCCAAGCCAGCAGTAAGTCCAACATGCTGCGGGCCGCAACTCAGCCACCTCTGCTGACGAGCA  
 GCCCATATTGGCAACTACCGGCTCCTTAAGACCATTGGCAAGGGTAACCTTGGCAAGGTGAAGTTGGCC  
 CGGCACATCTGACGGGAAAGAGGTAGCTGTGAAGATCATCGACAAGACCCAGCTGAACTCCTCCAGCC  
 TACAGAACTGTTCCGAGAAGTAAGAATAATGAAGTTTTGAATCATCCCAACATAGTTAAGTTGTTTGA  
 AGTGATCGAGACTGAGAAGACTCTCTACCTTGTTCATGGAGTATGCCAGTGGCGGAGAGGTGTTTATTAC  
 CTAGTGGCCCATGGCAGGATGAAAGAAAAGAAGCTCGAGCCAAATTCGCCAGATAGTGTCTGCTGTGC  
 AGTACTGTACCAGAAGTTCATTGTTTCATAGAGATCTAAAGGCAGAAAACCTGCTCCTGGATGCTGATAT  
 GAACATCAAGATTGCAGACTTTGGCTTTAGCAACGAATCACCTTTGGGAACAAGCTGGATACTTTCTGT  
 GGCAGTCTCCTTATGCTGCCCAAGAACTTTCCAGGGCAAAAAGTATGATGGTCCCTGAGGTGGATGCT  
 GGAGCCTGGGAGTCATCCTCTATACACTGGTCAGCGGATCCCTGCCTTTTGGTGGACAGAACCTCAAGGA  
 GCTGCGGGAACGGGACTGAGGGGAAATACCGTATTCCGTTCTACATGTCCACGGACTGTGAAAATCTG  
 CTTAAGAAATTTCTCATACTTAATCCTAGTAAGAGAGGCACTTTAGAGCAAATTAAGAAAGATCGGTGGA  
 TGAACGTGGGGCATGAGGACGATGAGCTAAAGCCTTATGTGGAACCTCTCCCTGACTACAAGGACCCCG  
 GCGGACAGAGTTGATGGTGTCAATGGGTTACACACGGGAAGAGATCCAGGACTCGCTGGTAGGCCAGAGG  
 TACAACGAAGTGATGGCTACCTATCTGCTCCTTGGCTACAAGAGCTCTGAGCTGGAAGGTGATACCATCA  
 CTTTGAAGCCCGGCCTTCAGTGATCTAACCAACAGCAGTGCACCATCTCCATCCACAAGGTTGAGCG  
 CAGCGTCTCTGCCAACCCCAAGCAACGACGCTCCAGTGACCAGGCGTCCCTGCCATTCCACCTCGAAT  
 TCTACTCTAAGAAGACTCAGAGTAACAACGCAGAAAATAAGCGCCTGAGGAAGAGACAGGCGGAAAG  
 CCAGCAGCACCGCAAAGTGCCTGCCAGCCCTCTGCCTGGCCTGGACAGGAAGAAGACCACTCCTGCCCC  
 CTCCACGAACAGCGTCTTTCCACCAGCACAAACCGAAGCAGGAACTCCCACTTTTGGACAGGGCCAGC  
 CTTGGCCAGGCCCTCCATCCAGAATGGTAAAGACAGCCTAACCATGCCAGGGTCCCGGGCCTCCACGGCTT  
 CTGCTTCTGCCGAGTCTCTGCGGCCCGGCCCGCCAGCACCAGAAATCCATGTCTGCCTCCGTACACCC  
 CAACAAGGCTCTGGGTTGCCCCACGGAGAGTAACTGTGAGGTGCCTCGGCCAGCACAGCCCCCAG  
 CGCGTCCCTGTGCCTCCCCCTCGCCCAACATCAGCAGCAGTGTGAGGCCCCAGACCGAACTAATT  
 TCCCACGGGTGTGTCCAGTCAAGCACCTTCCATGCTGGGCAGTCCGACAGGTGCGGGACCAGCAGAA  
 TCTACCCTACGGTGTGACCCAGCCTCTCCCTCTGGCCATAGCCAGGGCCGGCGGGGGCCTCTGGCAGC  
 ATCTTCAGCAAGTTCACCTCAAAGTTTGTCCGAGGAACCTGAATGAACCTGAAAGCAAAGACCGAGTGG  
 AGACGCTCAGACCTCACGTGGTAGGCACTGGAGGCACTGACAAGGACAAGGAGGAGTTTCGGGAGGCCAA  
 GCCTCGCTCCCTGCGCTTACCTGGAGCATGAAGACCAGAGCTCTATGGAGCCCAATGAGATGATGCGG  
 GAGATCCGCAAGGTGCTGGACGCCAACAGCTGCCAAAGCGAGCTGCACGAGCGGTACATGCTACTGTGCG  
 TGCATGGCACACCAGGCCAGGAACTTTGTGCAAGTGGGAGATGGAGGTGTGCAAACTGCCCGGCTGTC  
 TCTCAACGGTGTTCGGTTAAGCGGATATCGGGCACTTCCATGGCCTTCAAAAACATTGCCTCAAAAATA  
 GCCAATGAGCTGAAGCTT

**ACGCGT**ACGCGGCCGCTCGAG – GFP Tag – GTTTAA

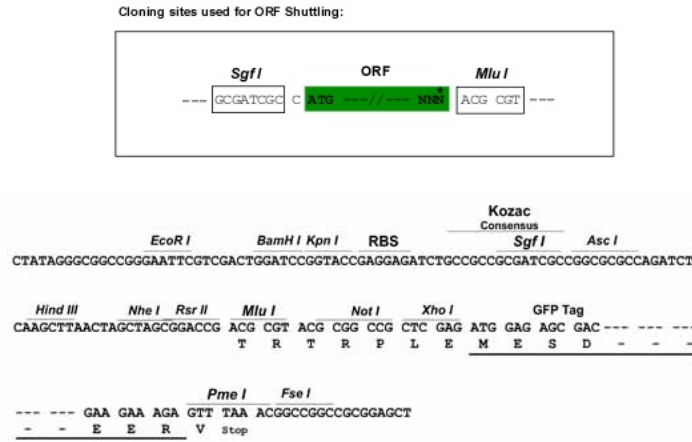
**Protein Sequence:** >MG227294 representing NM\_007928  
 Red=Cloning site Green=Tags(s)

MSSARTPLPTLNERDTEQPTLGHLDSPSSKSNMLRGRNSATSADEQPHIGNYRLLKTIQKGNFAKVKLA  
 RHILTGKEVAVKIIDKTQLNSSSLQKLFREVRIMKVLNHPNIVKLFEVIETEKTLVLMVEYASGGVEFDY  
 LVAHGRMKEKEARAKFRQIVSAVQYCHQKFIVHRDLKAENLLLDADMNIKIADFGFSNEFTFGNKLDFTFC  
 GSPPYAAPELFQGGKYDGPVDVWSLGVILYTLVSGSLPFDGQNLKELRERVLRGKYRIPFYMSTDCENL  
 LKKFLILNPSKRGTLEQIMKDRWMNVGHEDDELKPYVEPLPDYKDPRTTELMVSMGYTREEIQDSLVGQR  
 YNEVMATYLLLLGYKSSELEGDTITLKPRPSADLTNSSAPSPSHKVQRSVSANPKQRRSSDQAVPAIPTSN  
 SYSKKTQSNNANRPEEETGRKASSTAKVPASPLPGLDRKKTTPAPSTNSVLSTSTNRSRNSPLLDRAS  
 LGQASIQNGKDSLTPGSRASASAAVSAARPRQHQSMSASVHPNKASGLPPTESNCEVPRPSTAPQ  
 RVPVASPSAHNISSSSGAPDRTNFPRGVSSRSTFHAGQLRQVRDQQLPYGVTPASPSGHSQGRRGASGS  
 IFSKFTSKFVRRNLNEPESKDRVETLRPHVVGSGGTDKDKKEEFREAKPRSLRFTWSMKTTSMEPNEMMR  
 EIRKVLANSQCSELHERYMLLCVHGTPGHENFVQWEMEVCKLPRLSLNGVRFKRISGTSMAFKNIASKI  
 ANELKL

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_007928

**ORF Size:** 2328 bp

**OTI Disclaimer:** Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at [custsupport@origene.com](mailto:custsupport@origene.com) or by calling 301.340.3188 option 3 for pricing and delivery.

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\\_007928.3](#)

**RefSeq Size:** 4648 bp

**RefSeq ORF:** 2331 bp

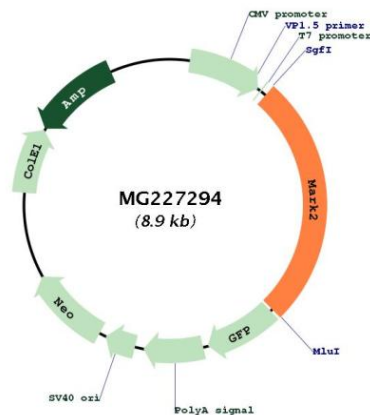
**Locus ID:** 13728

**UniProt ID:** [Q05512](#)

**Cytogenetics:** 19 5.32 cM

**Gene Summary:**

Serine/threonine-protein kinase. Involved in cell polarity and microtubule dynamics regulation. Phosphorylates CRTC2/TORC2, DCX, HDAC7, KIF13B, MAP2, MAP4 and RAB11FIP2. Phosphorylates the microtubule-associated protein MAPT/TAU. Plays a key role in cell polarity by phosphorylating the microtubule-associated proteins MAP2, MAP4 and MAPT/TAU at KXGS motifs, causing detachment from microtubules, and their disassembly. Regulates epithelial cell polarity by phosphorylating RAB11FIP2. Involved in the regulation of neuronal migration through its dual activities in regulating cellular polarity and microtubule dynamics, possibly by phosphorylating and regulating DCX. Regulates axogenesis by phosphorylating KIF13B, promoting interaction between KIF13B and 14-3-3 and inhibiting microtubule-dependent accumulation of KIF13B. Also required for neurite outgrowth and establishment of neuronal polarity. Regulates localization and activity of some histone deacetylases by mediating phosphorylation of HDAC7, promoting subsequent interaction between HDAC7 and 14-3-3 and export from the nucleus. Also acts as a positive regulator of the Wnt signaling pathway, probably by mediating phosphorylation of dishevelled proteins (DVL1, DVL2 and/or DVL3). Modulates the developmental decision to build a columnar versus a hepatic epithelial cell apparently by promoting a switch from a direct to a transcytotic mode of apical protein delivery. Essential for the asymmetric development of membrane domains of polarized epithelial cells.[UniProtKB/Swiss-Prot Function]

**Product images:**

Circular map for MG227294