

## Product datasheet for **MC223581**

### Mical2 (NM\_001193305) Mouse Untagged Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Mical2 (NM\_001193305) Mouse Untagged Clone  
**Tag:** Tag Free  
**Symbol:** Mical2  
**Synonyms:** 5330438E18Rik; 9530064J02; MICAL-2; mKIAA0750  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Cell Selection:** Neomycin  
**Fully Sequenced ORF:** >MC223581 representing NM\_001193305  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGC**C

ATGGGAGAGAATGAAGATGAGAAGCAGGCGCAGGCCAGCCAGGTCTTCGAGAACCTTTGTGCAAGCTACCA  
 CATGCAAAGGGACCCTCCAGGCCTTCAACATCCTCACCTGCCTCCTGGACCTAGATCCGCTGGACCATAG  
 GAACTTCTACTCCCAGCTCAAGTCCAAGGTGAACACCTGGAAGGCCAAAGCCCTGTGGCACAACCTGGAT  
 AAGCGCGGCTCCCAAGGAGTACAAGCGAGGAAAAGCCTGCTCGAACACTAAGTGTCTCATCGTCGGAG  
 GAGGACCATGTGGCTTGCACACTGCCATTGAACTTGCCTACCTGGGAGCCAAAGTGGTTGTGGTGGAGAA  
 GAGGGACACCTTCTCCCGGAACAATGTCTGCACCTCTGGCCCTTCACTATCCATGACCTGCGGGGCCTG  
 GGGGCCAAGAAGTTCTATGGGAAATTCTGTGCTGGCTCCATCGACCACATCAGTATCCGACAACCTGCAGC  
 TTATCCTCTTCAAGGTGGCCCTGATGCTGGGAGTGGAGGTCCACGTGAATGTGGAGTTTGTGAGGGTGT  
 GGAGCCTCCTGAAGACCAAGAGAATCAAAAAGTTGGATGGCGGGCAGAATTCCTCCTGCAGACCACGCC  
 CTGTCTGACTTTGAGTTTGTATGTCATCATCGGTGCTGACGGTACAGGAACACGCTAGAAGGCTTCAGGA  
 GGAAAGAGTTCGAGGGAAGCTGGCCATCGCCATCACCGCCAACTTCATAAACAGGAACGACACAGCTGA  
 GGCCAAGGTGGAGGAGATCAGTGGTGTTCCTTCAATCCTTCAACAGAAAGTTCTTCCAGGACCTGAAGGAA  
 GAAACAGGGATTGATCTCGAGAACATTGTTTACTATAAGGACAGTACCCACTACTTTGTCATGACAGCCA  
 AGAAGCAGAGCCTGCTGGACAAGGGCGTCATCCTTAATGACTACATTGACACAGAGATGCTGCTGTGTTT  
 GGAGAATGTGAACCAGGACAACCTGCTCTCCTACGCCAGAGAAGCCGCTGACTTTGCCACCAACTACCAG  
 CTGCCATCCTTAGACTTTGCCATCAATCACAACGGGCAGCCTGACGTGGCCATGTTGACTTCACTCCA  
 TGTATGCCTCAGAGAACGAGCTCTGATGCGTGAGCGCCAGGCACACCAGCTGCTCGTGGCTCTTGTGGG  
 CGACAGCCTGCTTGGCCATTTTGGCCATGGGCACAGGCTGTGCCCGAGGCTTCTGGCAGCCTTTGAC  
 ACGGCATGGATGGTGAAGAGCTGGGACCAGGGCACCCCTCCCCTGGAGGTATTAGCTGAAAGAGAGAGTC  
 TTTACAGGCTGTTACCTCAGACAACCCAGAGAACATCAACAAAATTTTGGAGCAGTACACATTGGACCC  
 AGCCACGCGGTACCCAAACCTCAACCTGCACTGCGTCAGGCCTACCAGGTGAAGCATTGTACATCACT  
 AAGGAGATGGACCGCTTCCCTCTCGAGAGATGGGGCTCAGTGAGGAGATCTGTCAGCCTCTCCAGGCGGG



```

AGTCAGACATCCGGCCTAACAGCTTTAACCTGGTGCCAGCAGCAGACCAAGGGTTACCAGCACGTCAG
AGTCACTGACCTGACCACATCCTGGCGCAGCGCTTGGCCCTGTGTGCCATCATCCACAGCTTCCGGCCA
GAGCTGATCAACTTTGACTCGTGAATGAAGATGACGCTGTGGAGAACAACCACTGGCATTGATGTGG
CCAAGCGTGAGTTGGGATCCTGCCTGTGACCACAGGCAAGAGATGGCATCTACCCAGGAGCCAGACAA
GCTCAGCATGGTCATGTACCTCTCCAAGTTCTATGAGCTCTCCGGGGCACTCCACTGAGACCCATGGAT
TCCTGGCGTAAAACTATGGAGAAAATGCTGACTTTGGCTTGGGCAAAACATTTCAGAATAACTATC
TCAACCTCACATTGCCAGAAAGAGACCCACGGGTAGACACCCAGACTGAAGAGAATGACATGAACAA
GAGGCGGCGACAAGGCTTCAACCACCTGGAAGAGCTGCCATCCTTCTCCAGCCGAGCCTGGGCTCCAGT
CAAGAGTATGCTAAAGAAAGTGGCAGTCAGAACAAGGTCAGCACATGGCCAATCAGCTGCTAGCCAAGT
TTGAGGAGAACACTCGGAACCTTCAGTCGTGAAACAGGACTGCCGCCGGGTCTCAGGCATAGGTAAGCC
TGTCTGTGCTCTGCCTCTCGCCCTCCTGGCACCTTTGCTGCCCAAGCTGGAGGAGTCCACTCCCAGG
CTTCCACCTCCTGAAAAGGCAGTTCTCCTCCACGGTGGCAACAGGACAGGTGCTCAGAGAACTCAACC
AAGTACCGCTAGTGGCAGTGGCCAGCAGACCTGGAGAGCCAGGGCCAAGTCAGACCTGCAACTGGG
TGGGGTTGAAAATCTCGTACCCTGCCTCGCACCTGCCAAGGGGCACTGGCCCTGTCCGGGTGCTCGG
CGCCTACAGCAAGTAGAAGAAAAGGTGCTTCAAGAGGGCCAGAACTTGCTAACAGGGAATTCACA
CAAAGAACATTAAGAGAAGGCAGCTCACCTGGCCTCCATGTTTGGACACGGGGATTTACCACAGGATAA
GCTCCTATCTAAACGCGTGCCTCAGCTCATCCTCCATCTCCTCCCTCTTGCTTCCGTCTCCTCATCCA
GCTGCTGCTTCTCTCCACCCGCTGCCGACTCTGTTTCTCCTGCCAGAAAGCTGACAGTAGGGAAAGTAT
CCAGCGGAATAGGGGCTGCAGCTGAAGTTCTGGTCAATCTGTACTTGAATGATCAGACCTAAGACACA
GGCCACCTCTCCAGACCTGGAATCCCCGAGAAAGGCATCCCCCTGAGCTGGGCGGCAGAGACACCTGC
TACTTTTGAAGAAGCGTGTATACATGATAGAGCGGCTGAGTGTGAGGGCCACTTTTCCACCAAGAGT
GCTTCCGTTGCAGCGTCTGCAGTGCCACCCTGCCCTGGCTGCCTATGCCTTTGACTGCGATGAAGGCAA
ATTTTACTGCAAGCCCCATTTTGTCTACTGCAAAACCAGTAGCAACACGCGAAAGAGACGGGCAGAGCTG
AATCAGCAAAGAGAGGGAAGGAACATGGCAGGAGCAGGAAGCACCTCGGAGGGATGTACCCACAGAAA
GCTCTTGTGAGTGGCGCCATCAGCACGCCAGAAGGCAGCCCCCAGTACGTTTCAGCCTTCCAGTCTCT
ACACCCACTTCTTGGCTGA
    
```

AGCGGACCGACGCTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
TGGATTACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:**

SgfI-RsrII

**ACCN:**

NM\_001193305

**Insert Size:**

3309 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](#)

**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\\_001193305.1](#), [NP\\_001180234.1](#)

**RefSeq Size:** 3680 bp

**RefSeq ORF:** 3309 bp

**Locus ID:** 320878

**UniProt ID:** [Q8BML1](#)

**Cytogenetics:** 7 F1

**Gene Summary:** Nuclear monooxygenase that promotes depolymerization of F-actin by mediating oxidation of specific methionine residues on actin to form methionine-sulfoxide, resulting in actin filament disassembly and preventing repolymerization (PubMed:23911929, PubMed:23927065). In the absence of actin, it also functions as a NADPH oxidase producing H<sub>2</sub>O<sub>2</sub> (By similarity). Acts as a key regulator of the SRF signaling pathway elicited by nerve growth factor and serum: mediates oxidation and subsequent depolymerization of nuclear actin, leading to increase MKL1/MRTF-A presence in the nucleus and promote SRF:MKL1/MRTF-A-dependent gene transcription. Does not activate SRF:MKL1/MRTF-A through RhoA (By similarity).  
[UniProtKB/Swiss-Prot Function]  
Transcript Variant: This variant (A) encodes the longer isoform (A). Sequence Note: This RefSeq record was created from genomic sequence data to make the sequence consistent with the reference genome assembly. The genomic coordinates used for the transcript record were based on transcript alignments.