

Product datasheet for **MG218926**

Mcu (NM_001033259) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Mcu (NM_001033259) Mouse Tagged ORF Clone
Tag: TurboGFP
Symbol: Mcu
Synonyms: 2010012O16Rik; AV064928; C10orf42; Ccdc109a; D130073L02Rik; Gm64
Mammalian Cell Selection: Neomycin
Vector: pCMV6-AC-GFP (PS100010)
E. coli Selection: Ampicillin (100 ug/mL)
ORF Nucleotide Sequence: >MG218926 representing NM_001033259
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGCGGCCGCCGAGGTAGATCGCTCCTGCTGCTGCTGCTGCTCCCGGGCGGGCGGGGGCGCCGGCG
GCTGCGGAGCGTACTGCCGGCTGCTTTCCCGGGCTGGGCGTCAGCCGCCACCGCCGACCAGCAGCA
CCGGACGGCACACCAGAGGCCGCTTCTGGCAGAGCGTGGGAGCCGCATATTGCAGTACGGTTGTGCC
TCTGATGACGTGACGGTGGTTTACCAAAATGGATTACCGGTGATATCTGTGAGGCTACCTCTCGACGG
AGCGCTGCCAATTCACACTCAAGCCTATCTGACTCAGTCGGCGTGTTTTACGACAACGCAAGAGGA
GGATCGGGGAATCGACCGGGTCGCCATCTACTCACCAGATGGCGTTCGAGTCGCTGCCACGGGGATA
GACCTCCTGCTCCTCGATGACTTTAAGCTTGTCATTAATGACTTAACATACCACGTACGGCCACCAAGA
GAGACCTCCTAAGCCATGAAGATGCAGCGACGCTGAACGACGTGAAGACCTGGTCCAGCAGCTGTACAC
CACACTGTGCAATTGAGCAGCATCAGCTTAACAAAGAGCGGGAGCTCGTGGAGAGGTTAGAGGACCTCAAG
CAGCAGCTGGCCCCCTGGAGAAGGTACGAATTGAAATTAGCAGAAAAGCAGAGAAGAGGACCACTCTGG
TGCTGTGGGGAGGCTGGCCTACATGGCCACCCAGTTTGGCATTCTGGCCCGGCTCACCTGGTGGGAGTA
CTCGTGGGACATCATGGAGCCCGTCACCTACTTCATCAGTACGGAAGCGCCATGGCCATGTATGCGTAT
TTTGAATGACGCGCCAGGAATATGTTTATCCAGAAGCCAGAGACAGACAATACTTATTATTTTCCATA
AAGGAGCCAAAAAGTCAGTTCGACCTAGAGAAATACAATCAGCTCAAGGATGCAATTGCTCAGGCAGA
AATGGATCTTAAGAGACTGAGAGACCCATTACAAGTACACCTGCCCTCCGACAGATCGGAGAAAAGGAA

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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Protein Sequence: >MG218926 representing NM_001033259
 Red=Cloning site Green=Tags(s)

MAAAAGRSLLLLLCSRGGGGGAGGCGAL TAGCFPLGVSRRHRPHQQHRTAHQRPASWQSVGAAYCSTVVP
 SDDVTVVYQNLPLVISVRLPSRRERCQFTLKPISDSVGVFLRQLQEEDRGIDRVAIYSPDGVRVAASTGI
 DLLLLDDFKLVINDLTYHVRPPKRDLLSHEDAATLNDVKT LVQQLYTTLCIEQHQLNKERELVERLEDLK
 QQLAPLEKVRIEISRKAERKRTTLVLWGGLAYMATQFGILARLTWWEYSWDIMEPVTYFITYGSAMAMYAY
 FVMTRQEYVYPEARDRQYLLFFHKGAKKSRFDLEKYNQLKDAIAQAEMDLKRLRDPLQVHLPLRQIGEKE

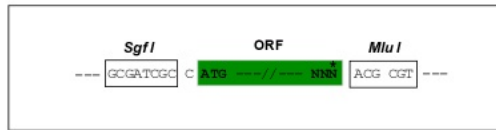
TRTRPLE - GFP Tag - V

Chromatograms: https://cdn.origene.com/chromatograms/ja1334_b07.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



ACCN: NM_001033259

ORF Size: 1050 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: [NM_001033259.4](#)

RefSeq Size: 1423 bp

RefSeq ORF: 1053 bp

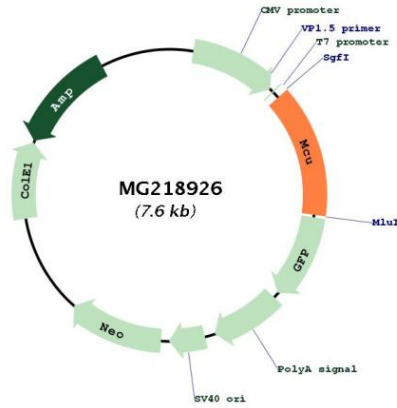
Locus ID: 215999

UniProt ID: [Q3UMR5](#)

Cytogenetics: 10 B4

Gene Summary: Mitochondrial inner membrane calcium uniporter that mediates calcium uptake into mitochondria (PubMed:21685886, PubMed:23900286, PubMed:24212091). Constitutes the pore-forming and calcium-conducting subunit of the uniporter complex (unipler) (By similarity). Activity is regulated by MICU1 and MICU2 (By similarity). At low Ca(2+) levels MCU activity is down-regulated by MICU1 and MICU2; at higher Ca(2+) levels MICU1 increases MCU activity (By similarity). Mitochondrial calcium homeostasis plays key roles in cellular physiology and regulates cell bioenergetics, cytoplasmic calcium signals and activation of cell death pathways (By similarity). Involved in buffering the amplitude of systolic calcium rises in cardiomyocytes (By similarity). While dispensable for baseline homeostatic cardiac function, acts as a key regulator of short-term mitochondrial calcium loading underlying a 'fight-or-flight' response during acute stress: acts by mediating a rapid increase of mitochondrial calcium in pacemaker cells (PubMed:26119742, PubMed:26119731, PubMed:25603276). Participates in mitochondrial permeability transition during ischemia-reperfusion injury (PubMed:26119731). Regulates glucose-dependent insulin secretion in pancreatic beta-cells by regulating mitochondrial calcium uptake (By similarity). Mitochondrial calcium uptake in skeletal muscle cells is involved in muscle size in adults (PubMed:25732818). Regulates synaptic vesicle endocytosis kinetics in central nerve terminal (PubMed:26644474). Involved in antigen processing and presentation (PubMed:25251370).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG218926