

## Product datasheet for **MG210494**

### **Mfn2 (NM\_133201) Mouse Tagged ORF Clone**

#### **Product data:**

|                           |   |
|---------------------------|---|
| Product Type:             | Expression Plasmids                     |
| Product Name:             | Mfn2 (NM_133201) Mouse Tagged ORF Clone |
| Tag:                      | TurboGFP                                |
| Symbol:                   | Mfn2                                    |
| Synonyms:                 | D630023P19Rik; Fzo                      |
| Mammalian Cell Selection: | Neomycin                                |
| Vector:                   | pCMV6-AC-GFP (PS100010)                 |
| E. coli Selection:        | Ampicillin (100 ug/mL)                  |



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**ORF Nucleotide Sequence:**

>MG210494 representing NM\_133201  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGTCCTGCTCTTTTCTCGATGCAACTCCATCGTCACCGTCAAGAAGGATAAGCGACACATGGCTGAAG  
 TGAATGCTTCCCCTCTCAAGCACTTTGTACTGCCAAGAAAAAGATCAATGGAATCTTTGAGCAGCTGGG  
 GGCTACATCCAAGAGAGCGCCAGCTTCCCTGAAGACACCCACAGGAACACAGAAGCTGGACCCGGTTACC  
 ACGGAAGAGCAGGTCTGGACGTCAAAGGGTACCTGTCCAAGGTCAAGGGTATCAGCGAAGTGTGGCCA  
 GGCGGCACATGAAGGTGGCTTTTTTGGCCGACGAGCAATGGGAAGAGCACCGTGATCAATGCCATGCT  
 CTGGGACAAAGTTCTGCTATCTGGGATTGGTACATACCACCAATTGCTTCTCGGGTTGGGGCACAGAT  
 GGCCATGAGGCCCTTCTCCTCACAGAGGGCTCAGAAGAGAAGAAGAGTGTCAAGACTGTGAACCAACTGG  
 CCCATGCCCTCCATCAGGACGAGCAGTTGCATGCAGGCAGCATGGTGAGTGTGATGTGCCCAACTCCAA  
 GTGTCCGCTCCTGAAGGATGACCTCGTGTGATGGACAGCCCTGGGATCGATGTTACCACGGAGCTGGAC  
 AGCTGGATTGATAAGTTTTGCCTGGATGCTGATGTGTTTGTGCTGGTGGCCAACCTCAGAGTCCACCGTGA  
 TGCAGACGGAGAAGCAGTTCTTCCACAAAGTGAGTGAACGTCTCTCCCGCCCAACATCTTCATCCTGAA  
 CAACCGCTGGGATGCGTCTGCCTCGGAGCCTGAGTACATGGAGGAGGTGCGGCGGCAGCAGATGGAGCGC  
 TGCACCAGCTTTCTGGTGGATGAGCTGGGCGTGGTGGATCGAGCTCAGGCTGGGGACCGGATCTTCTTCG  
 TGTCTGCCAAGGAGGTTCTCAGCGCCAGGGTCCAGAAAGCCAGGGCATGCCAGAAGGAGGCGGCGCTCT  
 CGCAGAAGTTTTCAAGTGAGGATGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGT  
 CAGTCTGCAGTAAAGACCAAAATTTGAGCAGCACACAGTCCGGGCAAGCAGATTGCAGAGGCCGTTTCGTC  
 TCATCATGGATTCCCTGCACATCGCAGCTCAGGAGCAGCGGGTTTATTGCCTAGAAATGCGGGAAGAGCG  
 GCAAGACCGGCTGAGGTTTATTGACAAGCAGCTGGAGCTCCTGGCTCAAGACTACAAGCTGCGAATTAAG  
 CAGATTACGGAGGAAGTGAAAGGCAGGTGCCACAGCCATGGCTGAAGAGATCAGGCGCCTCTCTGTGC  
 TAGTTGACGAGTACCAGATGGACTTCCACCCATCCCCAGTTGTCTCAAGGTTTATAAGAACGAGCTGCA  
 CCGCCATATAGAGGAAGGTCTGGGCCGGAACCTGTCTGACCGCTGCTCCACTGCCATTGCCAGTTCAGT  
 CAGACTATGCAGCAGGACATGATAGACGGCTTGAAGCCCCTTCTCCTGTATCTATGCGGAATCAGATAG  
 ACATGCTGGTCCCTCGACAGTGTTCCTCCTCAGCTATGACCTGAATTGTGACAAGCTGTGTGCTGACTT  
 TCAGGAGGACATCGAGTCCACTTCTCCCTTGGATGGACTATGCTAGTGAACAGGTTCTGGGCCCAAG  
 AATAGCCGCCGGCCTTGTAGGCTACAGTGTAGGTTGAGGTTGAGGTTGAGGTTGAGGTTGAGGTTGAGGTT  
 CCAGCATGCCCCCTTGCCACAGAGCTCCCTCACCCAGGAGGAGCTCATGGTCTCCATGGTACTGGCCT  
 GGCTCTCTGACGTCTAGGACCTCCATGGCATTCTTGTGGTCCGAGGAGTGGTGTGGAAGGCAGTGGGC  
 TGGAGACTCATCGCCCTCTCTTTGGACTGTATGGCCTCCTGTACGTCTATGAGCGACTGACCTGGACCA  
 CCAAAGCCAAAGAGAGGGCCTTCAAGCGCCAGTTTGTGGAATACGCCAGTGAGAAGCTACAGCTCATCAT  
 CAGTTACACCGGCTCTAACTGCAGCCACCAAGTCCAGCAGGAATTGTCTGGGACATTTGCTCATCTGTGC  
 CAGCAAGTTGACATACCCGAGATAATCTGGAGCAGGAAATTGCTGCCATGAACAAGAAAGTCGAGGCTC  
 TGGATTCACTTCAGAGCAGAGCCAACTGCTCAGGAATAAAGCTGGCTGGTTGGACAGCGAACTCAACAT  
 GTTCACACACCAGTACCTGCAGCCAGCAGA

**ACGCGT**ACGCGGCCGCTCGAG – GFP Tag – GTTTAA

**Protein Sequence:** >MG210494 representing NM\_133201  
 Red=Cloning site Green=Tags(s)

```
MSLLFSRCNSIVTVKKDKRHM AEVNASPLKHFVTAKKINGIFEQLGAYIQESASFLEDTHRNELDPVT
TEEQVLDVKGYL SKVRGISEVLARRHMKVAFFGRTSNGKSTVINAMLWVKVLLSGIGHTTNCFLRVGGTD
GHEAFLLEGGSEEKSKVTVNQLAHLHQDEQLHAGSMVSVMPNSKCPLLKDDLVLMDSPGIDVTTELD
SWIDKFCLDADVFVLVANSESTLMQTEKQFFHKVSRERL SRPNIFILNNRWDASASEPEYMEEVRRQHMER
CTSFLVDELGVVDRAQAGDRIFVSAKEVLSARVQKAQGMPEGGALAEQFQVRMFEFQNFERQFECCIS
QSAVKTKFEQHTVRAKQIAEAVRLIMDSLHIAAQEQRVYCLEMREERQDRRLRFIDKQLELLAQDYKLRIK
QITEEVERQVSTAMAEERIRLSVLVDEYQMDFHPSVVLKVKNELHRHIEEGLGRNLSRDCSTAIASSL
QTMQQDMIDGLKPLL PVS MRNQIDMLVPRQCFSLSYDLNCDKLCADFQEDIEFHSLGWTMLVNRFLGPK
NSRRALLGYSDQVQRPLPLTPANPSMPPLPQSSLTQEELMVMVMTGLASLTSRTSMGILVVGVVWKA VG
WRLIALSFGLYGLLYVYERLTWTTKAKERAFKRQFVEYASEKLQLIISYTGSNCSHQVQQLSGTFAHLC
QQVDITRDNLEQEI AAMNKKVEALDSLQSRAKLLRNKAGWLDSELNMFTHQYLQPSR
```

TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_133201

**ORF Size:** 2271 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\\_133201.2](#), [NP\\_573464.2](#)

**RefSeq Size:** 4377 bp

**RefSeq ORF:** 2274 bp

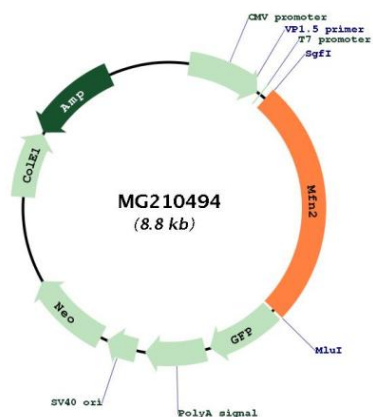
**Locus ID:** 170731

**UniProt ID:** [Q80U63](#)

**Cytogenetics:** 4 E1

**Gene Summary:** Mitochondrial outer membrane GTPase that mediates mitochondrial clustering and fusion (PubMed:12527753, PubMed:23921378, PubMed:23620051). Mitochondria are highly dynamic organelles, and their morphology is determined by the equilibrium between mitochondrial fusion and fission events. Overexpression induces the formation of mitochondrial networks. Membrane clustering requires GTPase activity and may involve a major rearrangement of the coiled coil domains (By similarity). Plays a central role in mitochondrial metabolism and may be associated with obesity and/or apoptosis processes. Plays an important role in the regulation of vascular smooth muscle cell proliferation (By similarity). Involved in the clearance of damaged mitochondria via selective autophagy (mitophagy). Is required for PRKN recruitment to dysfunctional mitochondria (PubMed:23620051). Involved in the control of unfolded protein response (UPR) upon ER stress including activation of apoptosis and autophagy during ER stress (PubMed:23921556). Acts as an upstream regulator of EIF2AK3 and suppresses EIF2AK3 activation under basal conditions (PubMed:23921556).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MG210494