

Product datasheet for **MR231083**

Mfn2 (NM_001285921) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Mfn2 (NM_001285921) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Mfn2
Synonyms:	D630023P19Rik; Fzo
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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**ORF Nucleotide
Sequence:**

>MR231083 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGTCCTGCTCTTTTCTCGATGCAACTCCATCGTCACCGTCAAGAAGGATAAGCGACACATGGCTGAAG
 TGAATGCTTCCCCTCTCAAGCACTTTGTACTGCCAAGAAAAAGATCAATGGAATCTTTGAGCAGCTGGG
 GGCTACATCCAAGAGAGCGCCAGCTTCCCTGAAGACACCCACAGGAACACAGAAGTGGACCCGGTTACC
 ACGGAAGAGCAGGTCTGGACGTCAAAGGGTACCTGTCCAAGGTCAAGGGTATCAGCGAAGTGTGGCCA
 GGCGGCACATGAAGGTGGCTTTTTTGGCCGACGAGCAATGGGAAGAGCACCGTGATCAATGCCATGCT
 CTGGGACAAAGTTCTGCCATCTGGGATTGGTACATACCACCAATTGCTTCTCGGGTTGGGGCACAGAT
 GGCCATGAGGCCCTCCTCCTCACAGAGGGCTCAGAAGAGAAGAAGAGTGTCAAGACTGTGAACCAACTGG
 CCCATGCCCTCCATCAGGACGAGCAGTTGCATGCAGGCAGCATGGTGAGTGTGATGTGCCCAACTCCAA
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 TGCAGACGGAGAAGCAGTTCTTCCACAAAGTGAGTGAACGTCTCTCCCGCCCAACATCTTCATCTGAA
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 TGCACCAGCTTTCTGGTGGATGAGCTGGGCGTGGTGGATCGAGCTCAGGCTGGGGACCGGATCTTCTTCG
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 CGCAGAAGTTTTCAAGTGAGGATGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTT
 CAGTCTGCAGTAAAGACCAAAATTTGAGCAGCACACAGTCCGGGCAAGCAGATTGCAGAGGCCGTTTCGTC
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 CCAAAGCCAAAGAGAGGGCCTTCAAGCGCCAGTTTGTGGAATACGCCAGTGAGAAGCTACAGCTCATCAT
 CAGTTACACCGGCTCTAACTGCAGCCACCAAGTCCAGCAGGAATTGTCTGGGACATTTGCTCATCTGTGC
 CAGCAAGTTGACATCACCCGAGATAATCTGGAGCAGGAAATTGCTGCCATGAACAAGAAAGTCGAGGCTC
 TGGATTCACTTCAGAGCAGAGCCAACTGCTCAGGAATAAAGCTGGCTGGTTGGACAGCGAACTCAACAT
 GTTCACACACCAGTACCTGCAGCCAGCAGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR231083 protein sequence
 Red=Cloning site Green=Tags(s)

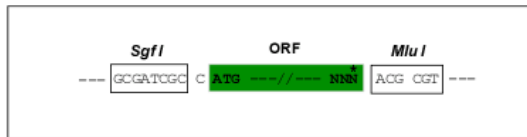
MSLLFSRCNSIVTVKKDKRHM AEVNASPLKHFVTAKKKINGIFEQLGAYIQESASFLEDTHRNTELDPVPT
 TEEQVLDVKGYL SKVRGISEVLARRHMKVAFFGRTSNGKSTVINAMLWDKVLPSGIGHTTNCFLRVGGTD
 GHEAFLATEGSEEKSVKTVNQLAHLHQDEQLHAGSMVSMWPNKCPLLKDDLVLMDSPGIDVTTELD
 SWIDKFCLDADVFVLVANSESTLMQTEKQFFHKVSRERL SRPNIFILNNRWDASASEPEYMEEVRRQHMER
 CTSFLVDELGVVDRAQAGDRIFVSAKEVLSARVQKAQGMPEGGALAEGFQVRMFEFQNFERQFEECIS
 QSAVKTKFEQHTVRAKQIAEAVRLIMDSLHIAAQEQRVYCLEMREERQDRRLRFIDKQLELLAQDYKLRIK
 QITEEVERQVSTAMAEERRLSVLVDEYQMDFHPSVVLKVKYNELHRHIEEGLGRNLSRDCSTAIASSL
 QTMQQDMIDGLKPLL PVS MRNQIDMLVPRQCFSLSYDLNCDKLCADFQEDIEFHFSLGW TMLVNRFLGPK
 NSRRALLGYS DQVQRPLPLTPANPSMPPLQSSLTQEELMVMVTGLASLTSRTSMGILVVG VVWKA VG
 WRLIALSFGLYGLLYVYERLTWTTKAKERAFKRQFVEYASEKLQLIISYTGSNCSHQVQQLSGTFAHLC
 QQVDITRDNLEQEI AAMNKKVEALDSLQSRAKLLRNKAGWLDSELNMFTHQYLQPSR

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shuttling:



* The last codon before the Stop codon of the ORF

ACCN: NM_001285921

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_001285921.1](#), [NP_001272850.1](#)

RefSeq Size: 4542 bp

RefSeq ORF: 2274 bp

Locus ID: 170731

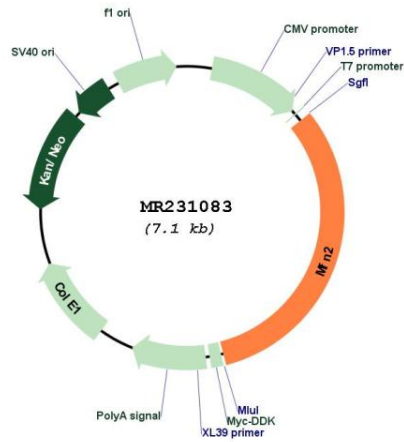
UniProt ID: [Q80U63](#)

Cytogenetics: 4 E1

MW: 86.2 kDa

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 MR231083