

## Product datasheet for **RC401800**

### **MSH2 (NM\_000251) Human Mutant ORF Clone**

#### **Product data:**

Product Type:	Mutant ORF Clones
Product Name:	MSH2 (NM_000251) Human Mutant ORF Clone
Mutation Description:	Q419X
Affected Codon#:	419
Affected NT#:	1255
Nucleotide Mutation:	MSH2 Mutant (Q419X), Myc-DDK-tagged ORF clone of Homo sapiens mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli) (MSH2) as transfection-ready DNA
Effect:	Colorectal cancer, non-polyposis
Symbol:	MSH2
Synonyms:	COCA1; FCC1; hMSH2; HNPCC; HNPCC1; LCFS2; MMRCS2
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_000251
ORF Size:	1254 bp
Restriction Sites:	SgfI-MluI



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**ORF Nucleotide Sequence:**

>RC401800 representing NM\_000251  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGGCCGAGGTCGGCTTCGTGCGCTTCTTTC  
 AGGGCATGCCGAGAAGCCGACCACCACAGTGCCTTTTCGACCGGGGCGACTTCTATACGGCGCACGG  
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGTGATCAAGTACATGGGGCCGCA  
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAATGAATTTTGAATCTTTGTAAAAGATCTTCTTC  
 TGGTTCGTAGTATAGAGTTGAAGTTTATAAGAATAGAGCTGGAATAAGGCATCCAAGGAGAATGATTG  
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTCTTTGGTAACAATGAT  
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG  
 GGTATGTGGATTCCATACAGAGGAACTAGGACTGTGTGAATCCCTGATAATGATCAGTTCTCCAATCT  
 TGAGGCTCTCCTCATCCAGATTGACCAAAGGAATGTGTTTTACCCGGAGGAGAGACTGCTGGAGACATG  
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAGAAAAAAGCTGACTTTTCCA  
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTGTGT  
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTTGAAGCTTTA  
 TCAGATGATTCCAACCTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGGATA  
 TTGCAGCAGTCAGAGCCCTTAACCTTTTTCAGGGTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC  
 TGCTTGTCTGAATAAGTGTAAACCCCTCAAGGACAAAGACTTGTAAACCAGTGGATTAAGCAGCCTCTC  
 ATGATAAAGAACAAGATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATGAGGC  
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAGAAGTTTCAAAGACA  
 AGCAGCAAACCTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAACTACCTAATGTTATA

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

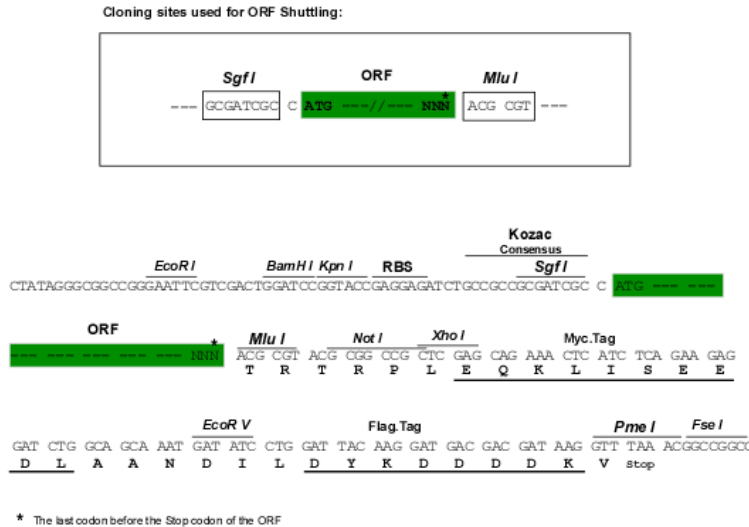
>RC401800 representing NM\_000251  
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRRFFQGMPEKPTTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA  
 GAKNLQSVVLKMNFEFVKDLLLLVRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND  
 MSASIGVVGVKMSAVDQQRQVGVGVVDSIQRKLGLCEFPDNDQFSNLEALLIQIGPKECVLPGETAGDM  
 GKLRLQIQRGGILITERKKADFSTKDIYQDLNRLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL  
 SDDSNFGQFELTTDFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGQRLVNQWIKQPL  
 MDKNRIEERLNLVEAFVEDAELRQTLQEDLLRRFPDLNRLAKKFQRQAANLQDCYRLYQGINQLPNVI

SGP**TRRRLEQKLISEEDLAANDILDYKDDDDKV**

**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**

**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).

**RefSeq:**

[NP\\_000242](#)

**RefSeq Size:**

1254 bp

**RefSeq ORF:**

2805 bp

**Locus ID:**

4436

**Cytogenetics:**

2p21-p16.3

**Domains:**

MutS\_V, MutS\_I, MutS\_III, MutS\_II, MutS\_IV

**Protein Families:**

Druggable Genome, Stem cell - Pluripotency

**Protein Pathways:**

Colorectal cancer, Mismatch repair, Pathways in cancer

**MW:** 46 kDa

**Gene Summary:** This locus is frequently mutated in hereditary nonpolyposis colon cancer (HNPCC). When cloned, it was discovered to be a human homolog of the E. coli mismatch repair gene mutS, consistent with the characteristic alterations in microsatellite sequences (RER+ phenotype) found in HNPCC. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Apr 2012]