

## Product datasheet for **RC401839**

### 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:	Y619X
Affected Codon#:	619
Affected NT#:	1857
Nucleotide Mutation:	MSH2 Mutant (Y619X), 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:	1854 bp
Restriction Sites:	Sgfl-MluI



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**ORF Nucleotide Sequence:**

>RC401839 representing NM\_000251  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGCCGAGGTCGGCTTCGTGCGCTTCTTTC  
 AGGGCATGCCGAGAAGCCGACCACCACAGTGCCTTTTCGACCGGGCGACTTCTATACGGCGCACGG  
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGTGATCAAGTACATGGGGCCGCA  
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAATGAATTTGAATCTTTGTAAAAGATCTTCTTC  
 TGGTTCGTAGTATAGAGTTGAAGTTTAAAGAATAGAGCTGAAATAAGGCATCCAAGGAGAATGATTG  
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTTTGGTAACAATGAT  
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG  
 GGTATGTGGATCCATACAGAGGAACTAGGACTGTGTGAATCCCTGATAATGATCAGTTCTCCAATCT  
 TGAGGCTCTCCTCATCCAGATTGGACCAAAGGAATGTGTTTTACCCGGAGGAGACTGCTGGAGACATG  
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAGAAAAAAGCTGACTTTTCCA  
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTCTGT  
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTAGAACTCTTA  
 TCAGATGATTCCAACTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGGATA  
 TTGCAGCAGTCAGAGCCCTTAACCTTTTTCAGGGTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC  
 TGCTTGTCTGAATAAGTGTAAACCCCTCAAGGACAAAGACTTGTAAACCAGTGGATTAAGCAGCCTCTC  
 ATGGATAAGAACAAGAATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATTTGAGGC  
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAGAAGTTTCAAAGCA  
 AGCAGCAAACCTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAACTACCTAATGTTATACAGGCT  
 CTGAAAAACATGAAGGAAAAACACCAGAAATTATTGTTGGCAGTTTTTGTGACTCCTTACTGATCTTC  
 GTTCTGACTTCTCCAAGTTTCAGGAAATGATAGAAACAACTTTAGATATGGATCAGGTGGAAAACCATGA  
 ATTCTTGTAAAACCTTCATTTGATCCTAATCTCAGTGAATTAAGAGAAATAATGAATGACTTGGAAAAG  
 AAGATGCAGTCAACATTAATAAGTGCAGCCAGAGATCTGGCTTGGACCCTGGCAAACAGATTAACCTGG  
 ATTCCAGTGCACAGTTTGGATATTACTTTCGTGTAACCTGTAAGGAAGAAAAAGTCTTCGTAACAATAA  
 AAATTTAGTACTGTAGATATCCAGAAGAATGGTGTAAATTTACCAACAGCAAATGACTTCTTTAAAT  
 GAAGAGTATACCAAAAAATAAACAGAATATGAAGAAGCCAGGATGCCATTGTTAAAGAAATTTGCAATA  
 TTTCTTCAAGGCTATGTAGAACCAATGCAGACACTCAATGATGTGTAGCTCAGCTAGATGCTGTTGTCAG  
 CTTTGCTCACGTGCAATGGAGCACCTGTTCCA

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

>RC401839 representing NM\_000251  
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRFQGMPEKPTTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA  
 GAKNLQSVVLKSMNFESFVKDLLVRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND  
 MSASIGVVGVKMSAVDQQRQVGVGYVDSIQRKLGLCEFPDNDQF SNLEALLIQIGPKECVLPGETAGDM  
 GKLRQIIQRGGILITERKKADFSTKDIYQDLNRLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL  
 SDDSNFGQFELTTDFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGQRLVNQWIKQPL  
 MDKNRIEERLNLVEAFVEDAELRQLQEDLLRRFPDLNRLAKKFQRQAANLQDCYRLYQGINQLPNVIQA  
 LEKHEGKHQKLLLAVFVTPLTDLRSDFSKFQEMIETTLMDQVENHEFLVKPSFDPNLSELREIMNDLEK  
 KMQSTLISAARDLGLDPGKQIKLDSSAQFGYYFRVTCKEEKVLRNNKFNSTVDIQKNGVKFTNSKLTSLN  
 EEYTKNKTEYEEAQDAIVKEIVNISSGYVEPMQTLNDVLAQLDAVVVFAHVSNGAPVP

SGP**TRRRLEQKLI**SEEDLAANDILDYKDDDDKV

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.

<b>Components:</b>	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).
<b>RefSeq:</b>	<a href="#">NP_000242</a>
<b>RefSeq Size:</b>	1854 bp
<b>RefSeq ORF:</b>	2805 bp
<b>Locus ID:</b>	4436
<b>Cytogenetics:</b>	2p21-p16.3
<b>Domains:</b>	MutS_V, MutS_I, MutS_III, MutS_II, MutS_IV
<b>Protein Families:</b>	Druggable Genome, Stem cell - Pluripotency
<b>Protein Pathways:</b>	Colorectal cancer, Mismatch repair, Pathways in cancer
<b>MW:</b>	68 kDa
<b>Gene Summary:</b>	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]