

Product datasheet for **RC401801**

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:	E422X
Affected Codon#:	422
Affected NT#:	1264
Nucleotide Mutation:	MSH2 Mutant (E422X), 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:	1263 bp
Restriction Sites:	SgfI-MluI



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ORF Nucleotide Sequence:

>RC401801 representing NM_000251
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGGCCGAGGTCGGCTTCGTGCGCTTCTTTCC
 AGGGCATGCCGAGAAGCCGACCACCACAGTGCGCCTTTTCGACCGGGGCGACTTCTATACGGCGCACGG
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGGTATCAAGTACATGGGGCCGCA
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAATGAATTTTGAATCTTTGTAAAAGATCTTCTTC
 TGGTTCGTAGTATAGAGTTGAAGTTTATAAGAATAGAGCTGGAATAAGGCATCCAAGGAGAATGATTG
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTTTGGTAACAATGAT
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG
 GGTATGTGGATTCCATACAGAGGAACTAGGACTGTGTGAATTCCTGATAATGATCAGTTCTCCAATCT
 TGAGGCTCTCCTCATCCAGATTGACCAAAGGAATGTGTTTTACCCGGAGGAGAGACTGTGGAGACATG
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAGAAAAAGCTGACTTTTCCA
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTCTGT
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTTGAAGCTTTA
 TCAGATGATTCCAACCTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGGATA
 TTGCAGCAGTCAGAGCCCTTAACCTTTTTCAGGGTTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC
 TGCCTTGTGAATAAGTGTAAACCCCTCAAGGACAAAGACTTGTAAACCAGTGGATTAAGCAGCCTCTC
 ATGGATAAGAACAGAATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATTGAGGC
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAGAAGTTTCAAAGACA
 AGCAGCAAACCTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAACTACCTAATGTTATACAGGCT
 CTG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401801 representing NM_000251
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRFQGMPEKPTTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA
 GAKNLQSVVLKMNFEFVKDLLLLVRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND
 MSASIGVVGVKMSAVDQQRQVGVYVDSIQRLGLCEFPDNDQFSNLEALLIQIGPKECVLPGGETAGDM
 GKLRQIIQRGGILITERKKADFSTKDIYQDLNRLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL
 SDDSNFGQFELTTDFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGRLVNQWIKQPL
 MDKNRIEERLNLVEAFVEDAELRQTLQEDLLRRFPDLNRLAKKFQRQAANLQDCYRLYQGINQLPNVIQA
 L

SGP**TRTRRLEQKLISEEDLAANDILDYKDDDDK**V

Restriction Sites:

Sgfl-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 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:

1263 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: 46.3 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]