

Product datasheet for **RC401890**

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:	H839R
Affected Codon#:	839
Affected NT#:	2516
Nucleotide Mutation:	MSH2 Mutant (H839R), 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:	2802 bp
Restriction Sites:	SgfI-MluI



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ORF Nucleotide Sequence:

>RC401890 representing NM_000251
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGGCCGAGGTCGGCTTCGTGCGCTTCTTTCC
 AGGGCATGCCGGAAGAAGCCGACCACCACAGTGCCTTTTCGACCGGGGCGACTTCTATACGGCGCACGG
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGTGATCAAGTACATGGGGCCGCA
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAAATGAATTTTGAATCTTTTGTAAAAGATCTTCTTC
 TGGTTCGTAGTATAGAGTTGAAGTTTATAAGAATAGAGCTGGAATAAGGCATCCAAGGAGAATGATTG
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTTTGGTAACAATGAT
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG
 GGTATGTGGATTCCATACAGAGGAACTAGGACTGTGTGAATCCCTGATAATGATCAGTTCTCCAATCT
 TGAGGCTCTCCTCATCCAGATTGGACCAAAGGAATGTGTTTTACCCGGAGGAGAGACTGTGGAGACATG
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAGAAAAAGCTGACTTTTCCA
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTCTGT
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTTGAAGCTTTA
 TCAGATGATTCCAACCTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGGATA
 TTGACAGCTCAGAGCCCTTAACCTTTTTCAGGGTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC
 TGCTTGTCTGAATAAGTGTAAAACCCCTCAAGGACAAAGACTTGTAAACCAGTGGATTAAGCAGCCTCTC
 ATGGATAAGAACAAGAATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATTGAGCC
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAAGAATTTCAAAGCA
 AGCAGCAAACCTTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAACTACCTAATGTTATACAGGCT
 CTGAAAAAACATGAAGGAAAAACACCAGAAATTATTGTTGGCAGTTTTTGTGACTCCTTACTGATCTTC
 GTTCTGACTTCTCCAAGTTTCAGGAAATGATAGAAACAACTTTAGATATGGATCAGGTGGAAAACCATGA
 ATTCTTGTAAAACCTTCATTTGATCTAATCTCAGTGAATTAAGAGAAATAATGAATGACTTGGAAAAG
 AAGATGCAGTCAACATTAATAAGTGCAGCCAGAGATCTGGCTTGGACCCTGGCAAACAGATTAACCTGG
 ATTCCAGTGCACAGTTTGGATATTACTTTCGTGTAACCTGTAAGGAAGAAAAAGTCTTCGTAACAATAA
 AAATTTAGTACTGTAGATATCCAGAAGAATGGTGTAAATTTACCAACAGCAAATGACTTCTTTAAAT
 GAAGAGTATACCAAAAAATAAACAGAATATGAAGAAGCCAGGATGCCATTGTTAAAGAAATTTGCAATA
 TTTCTTCAGGCTATGTAGAACCAATGCAGACACTCAATGATGTGTAGCTCAGCTAGATGCTGTTGTGAG
 CTTTGCTCACGTGCAATGGAGCACCTGTTCCATATGTACGACCAGCCATTTTGGAGAAAGGACAAAGGA
 AGAATTATATTAAGCATCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAATTCGATTTATTCCTAATG
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 CGTTCATGGCTGAAATGTTGGAACTGCTTCTATCCTCAGGCTGCAACCAAAGATTCAATAAATCAT
 AGATGAATTTGGGAAGAGGAACCTTACCTACGATGGATTTGGTTAGCATGGGCTATATCAGAATACAT
 GCAACAAAGATTGGTGCTTTTTCATGTTTGAACCCATTTTCATGAACCTACTGCCTTGGCCAATCAGA
 TACCAACTGTTAATAATCTACATGTCACAGCACTACCACTGAAGAGACCTTAACTATGCTTTATCAGGT
 GAAGAAAGGTGTCTGTGATCAAAGTTTTGGGATTCATGTTGCAGAGCTTGCTAATTTCCCTAAGCGTGTA
 ATAGAGTGTGCTAAACAGAAAGCCCTGGAACCTGAGGAGTTTTCAGTATATTGGAGAATCGCAAGGATATG
 ATATCATGGAACCAGCAGCAAAGAAGTCTATCTGAAAGAGAGCAAGGTGAAAAAATTTTTCAGGAGTT
 CCTGTCCAAGGTGAAACAAATGCCCTTACTGAAATGTCAGAAGAAAACATCACAAATAAAGTTAAACAG
 CTAAGAGCTGAAGTAATAGCAAAGAATAATAGCTTTGAAATGAAATCATTTACGAATAAAAGTTACTA
 CG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence: >RC401890 representing NM_000251
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRFVFGMPEKPTTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA
 GAKNLQSVVL SKMNFESFVKDLLLVRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND
 MSASIGVVGVKMSAVDQGRQVGVGYVDSIQRKLGLCEFPDNDQFSNLEALLIQIGPKECVLPGGETAGDM
 GKLRIIQRGGILITERKKADFSTKDIYQDLNRLLLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL
 SDDSNFGQFELTTFFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGGRLVNQWIKQPL
 MDKNRIEERLNLVEAFVEDAELRQTLQEDLLRRFPDLNRLAKKFQQAANLQDCYRLYQGINQLPNVIQA
 LEKHEGKHQKLLLAVFVTPLTDLRSDFSKFQEMIETTLDMDQVENHEFLVKPSFDPNLSELREIMNDLEK
 KMQSTLISAARDLGLDPGKQIKLDSSAQFGYYFRVTCKEEKVLRNNKNFSTVDIQKNGVKFTNSKLTSLN
 EEYTKNKTEYEEAQDAIVKEIVNISSGYVEPMQTLNDVLAQLDAVVSFAHVSNGAPVPPYVRPAILEKGQG
 RIILKASRHACVEVQDEIAFIPNDVYFEKDKQMFHIITGPNMGGKSTYIRQTGVIVLMAQIGCFVPCESA
 EVSIVDCILARVGAGDSQLKGVSTFMAEMLETASILRSATKDSLIIIDELGRGTSTYDGFGLAWAISEYI
 ATKIGAFCMFATHFHELTALANQIPTVNNLHVTALTTEETLTMLYQVKKGVCDQSFGIHVAELANFPKRV
 IECAKQKALELEEFQYIGESQGYDIMEPAAKKCYLEREQGEKIIQEFLSKVKQMPFTEMSEENITIKLKQ
 LKAEVIAKNNSFVNEIISRIKVTT

SGPTRRRL**EQLISEEDLAANDILDYKDDDDKV**

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 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: 2802 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: 102.7 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]