

Product datasheet for **RC401798**

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:	Q409K
Affected Codon#:	409
Affected NT#:	1225
Nucleotide Mutation:	MSH2 Mutant (Q409K), Myc-DDK-tagged ORF clone of Homo sapiens mutS homolog 2, colon cancer, nonpolyposis type 1 (E. coli) (MSH2) as transfection-ready DNA
Effect:	Colorel ner
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:

>RC401798 representing NM_000251
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGGCCGAGGTCGGCTTCGTGCGCTTCTTT
 AGGGCATGCCGGAAGAAGCCGACCACCACAGTGCCTTTTCGACCGGGCGACTTCTATACGGCGCACGG
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGTGATCAAGTACATGGGGCCGCA
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAAATGAATTTTGAATCTTTTGTAAAAGATCTTCTT
 TGGTTCGTAGTATAGAGTTGAAGTTTATAAGAATAGAGCTGGAATAAGGCATCCAAGGAGAATGATTG
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTTTGGTAACAATGAT
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG
 GGTATGTGGATTCCATACAGAGGAACTAGGACTGTGTGAATCCCTGATAATGATCAGTTCTCCAATCT
 TGAGGCTCTCCTCATCCAGATTGGACCAAAGGAATGTGTTTTACCCGGAGGAGAGACTGTGGAGACATG
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAGAAAAAGCTGACTTTTCCA
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTCTGT
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTTGAAGCTTTA
 TCAGATGATTCCAACCTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGATA
 TTGCAGCAGTCAGAGCCCTTAACCTTTTTCAGGGTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC
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 ATGGATAAGAACAAGAATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATTGAGGC
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAAGAATTTCAAAGCA
 AGCAGCAAACCTTACAAGATTGTTACCGACTCTATAAGGGTATAAATCAACTACCTAATGTTATACAGGCT
 CTGAAAAAACATGAAGGAAAAACACCAGAAATTATTGTTGGCAGTTTTTGTGACTCCTTACTGATCTTC
 GTTCTGACTTCTCCAAGTTTCAGGAAATGATAGAAACAACTTTAGATATGGATCAGGTGGAAAACCATGA
 ATTCTTGTAAAACCTTCATTTGATCCTAATCTCAGTGAATTAAGAGAAATAATGAATGACTTGGAAAAG
 AAGATGCAGTCAACATTAATAAGTGCAGCCAGAGATCTGGCTTGGACCCTGGCAAACAGATTAACCTGG
 ATTCCAGTGCACAGTTTGGATATTACTTTCGTGAACCTGTAAGGAAGAAAAAGCTTCTCGTAACAATAA
 AAACCTTACTGTAGATATCCAGAAGAATGGTGTAAATTTACCAACAGCAAATGACTTCTTTAAAT
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 TTTCTTCAAGGCTATGTAGAACCAATGCAGACACTCAATGATGTGTAGCTCAGCTAGATGCTGTTGTCAG
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 AGAATTATATTAAGCATCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAATTCATTTATTCCTAATG
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 GAAGTGTCCATTGTGGACTGCATCTTAGCCCGAGTAGGGGCTGGTGACAGTCAATTGAAAGGAGTCTCCA
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 AGATGAATTTGGGAAGAGGAACCTTACCTACGATGGATTTGGTTAGCATGGGCTATATCAGAATACATT
 GCAACAAAGATTGGTGTCTTTTGCATGTTTGAACCCATTTTTCATGAACCTACTGCCTTGGCCAATCAGA
 TACCAACTGTTAATAATCTACATGTCACAGCACTACCACTGAAGAGACCTTAACTATGCTTTATCAGGT
 GAAGAAAGGTGTCTGTGATCAAAGTTTTGGGATTCATGTTGCAGAGCTTGCTAATTTCCCTAAGCATGTA
 ATAGAGTGTGCTAAACAGAAAGCCCTGGAACCTGAGGAGTTTTCAGTATATTGGAGAATCGCAAGGATATG
 ATATCATGGAACCAGCAGCAAAGAAGTCTATCTGAAAAGAGAGCAAGGTGAAAAAATTTTTCAGGAGTT
 CCTGTCCAAGGTGAAACAAATGCCCTTACTGAAATGTCAGAAGAAAACATCACAAATAAAGTTAAAACAG
 CTAAGGCTGAAGTAATAGCAAAGAATAATAGCTTTGAAATGAAATCATTTACGAATAAAAGTTACTA
 CG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence: >RC401798 representing NM_000251
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRFVFGMPKPTTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA
 GAKNLQSVVL SKMNFESFVKDLLLRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND
 MSASIGVVGVKMSAVDQGRQVGVYVDSIQRKLGLCEFPDNDQFSNLEALLIQIGPKCVLPGGETAGDM
 GKLRIQIRGGILITERKKADFSTKDIYQDLNRLLLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL
 SDDSNFGQFELTTFFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGGRLVNQWIKQPL
 MDKNRIEERLNLVEAFVEDAELRQTLQEDLLRRFPDLNRLAKKFQQAANLQDCYRLYKGINQLPNVIQA
 LEKHEGHQKLLLAVFVTPLTDLRSDFSKFQEMIEITLMDQVENHEFLVKPSFDPNLSELREIMNDLEK
 KMQSTLISAARDLGLDPGKQIKLDSSAQFGYYFRVTCKEEKVLRNNKNFSTVDIQKNGVFTNSKLTSLN
 EEYTKNKTEYEEAQDAIVKEIVNISSGYVEPMQTLNDVLAQLDAVVSFAHVSNGAPVPPYVPAILEKGQG
 RIILKASRHACVEVQDEIAFIPNDVYFEKDKQMFHIITGPNMGGKSTYIRQTGVIVLMAQIGCFVPCESA
 EVSIVDCILARVGAGDSQLKGVSTFMAEMLETASILRSATKDSLIIIDELGRGTSTYDGFGLAWAISEYI
 ATKIGAFCMFATHFHELTALANQIPTVNNLHVTALTTEETLTMLYQVKKGVCDQSFGIHVAELANFPKHV
 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).
Note:	Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.
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]