

Product datasheet for **RC401708**

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:	T44M
Affected Codon#:	44
Affected NT#:	131
Nucleotide Mutation:	MSH2 Mutant (T44M), 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:**

>RC401708 representing NM_000251
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCGGTGCAGCCGAAGGAGACGCTGCAGTTGGAGAGCGCGGCCGAGGTCGGCTTCGTGCGCTTCTTTCC
 AGGGCATGCCGGAAGAAGCCGACCACCACAGTGCCTTTTTCGACCGGGCGACTTCTATATGGCGCACGG
 CGAGGACGCGCTGCTGGCCGCCGGGAGGTGTTCAAGACCCAGGGGTGATCAAGTACATGGGGCCGCA
 GGAGCAAAGAATCTGCAGAGTGTGTGCTTAGTAAAATGAATTTTGAATCTTTTGTAAAAGATCTTCTTC
 TGGTTCGTAGTATAGAGTTGAAGTTTATAAGAATAGAGCTGAAATAAGGCATCCAAGGAGAATGATTG
 GTATTTGGCATATAAGGCTTCTCCTGGCAATCTCTCAGTTTGAAGACATTCTTTGGTAACAATGAT
 ATGTCAGCTTCCATTGGTGTGTGGGTGTTAAAATGTCCGAGTTGATGGCCAGAGACAGGTTGGAGTTG
 GGTATGTGGATTCCATACAGAGGAACTAGGACTGTGTGAATCCCTGATAATGATCAGTTCTCCAATCT
 TGAGGCTCTCCTCATCCAGATTGGACCAAAGGAATGTGTTTTACCCGGAGGAGAGACTGTGGAGACATG
 GGGAAACTGAGACAGATAATTCAAAGAGGAGGAATTCGATCACAGAAAAGAAAAAGCTGACTTTTCCA
 CAAAAGACATTTATCAGGACCTCAACCGTTGTTGAAAGGCAAAAAGGGAGAGCAGATGAATAGTGTGT
 ATTGCCAGAAATGGAGAATCAGGTTGCAGTTTCATCACTGTCTGCGGTAATCAAGTTTTTGAAGCTTTA
 TCAGATGATTCCAACCTTTGGACAGTTTGAAGTACTACTTTTACTTTCAGCCAGTATATGAAATTTGGATA
 TTGACAGCTCAGAGCCCTTAACCTTTTTAGGGTCTGTTGAAGATACCACTGGCTCTCAGTCTCTGGC
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 ATGGATAAGAACAAGAATAGAGGAGAGATTGAATTTAGTGAAGCTTTTGTAGAAGATGCAGAATTGAGCC
 AGACTTTACAAGAAGATTTACTTCGTCGATTCCAGATCTTAACCGACTTGCCAAAGAATTTCAAAGCA
 AGCAGCAAACCTTACAAGATTGTTACCGACTCTATCAGGGTATAAATCAACTACCTAATGTTATACAGGCT
 CTGAAAAAACATGAAGGAAAAACACCAGAAATTATTGTTGGCAGTTTTTGTGACTCCTCTTACTGATCTTC
 GTTCTGACTTCTCCAAGTTTCAGGAAATGATAGAAAACACTTTAGATATGGATCAGGTGGAAAACCATGA
 ATTCTTGTAAAACCTTCATTTGATCTAATCTCAGTGAATTAAGAGAAAATAATGAATGACTTGGAAAAG
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 ATTCCAGTGCACAGTTTGGATATTACTTTCGTGAACCTGTAAGGAAGAAAAAGTCTTCGTAACAATAA
 AAACCTTAGTACTGTAGATATCCAGAAGAATGGTGTAAATTTACCAACAGCAAATTGACTTCTTTAAAT
 GAAGAGTATACCAAAAAATAAACAGAATATGAAGAAGCCAGGATGCCATTGTTAAAGAAATTGCAATA
 TTTCTTCAAGGCTATGTAGAACCAATGCAGACACTCAATGATGTGTAGCTCAGCTAGATGCTGTTGTGAG
 CTTTGGCTCACGTGCAATGGAGCACCTGTTCCATATGTACGACCAGCCATTTTGGAGAAAGGACAAGGA
 AGAATTATATTAAGCATCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAATTCGATTTATTCCTAATG
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 GAAGTGTCCATTGTGGACTGCATCTTAGCCCGAGTAGGGGCTGGTGACAGTCAATTGAAAGGAGTCTCCA
 CGTTCATGGCTGAAATGTTGAAAAGTCTTCTATCCTCAGGCTGCAACCAAAGATTCAATAAATCAT
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 GCAACAAAGATTGGTGTCTTTTGCATGTTTGAACCCATTTTTCATGAACCTACTGCCTTGGCCAATCAGA
 TACCAACTGTTAATAATCTACATGTCACAGCACTACCACTGAAGAGACCTTAACTATGCTTTATCAGGT
 GAAGAAAGGTGTCTGTGATCAAAGTTTTGGGATTCATGTTGCAGAGCTTGCTAATTTCCCTAAGCATGTA
 ATAGAGTGTGCTAAACAGAAAGCCCTGGAACCTGAGGAGTTTCAAGTATATTGGAGAATCGCAAGGATATG
 ATATCATGGAACCAGCAGCAAAGAAGTGTATCTGAAAAGAGAGCAAGGTGAAAAAATTTTCAAGGAGTT
 CCTGTCCAAGGTGAAACAAATGCCCTTTACTGAAATGTCAGAAGAAAACATCACAAATAAAGTTAAACAG
 CTAAGAAGCTGAAGTAATAGCAAAGAATAATAGCTTTGAAATGAAATCATTTACGAATAAAAGTTACTA
 CG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence: >RC401708 representing NM_000251
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLESAAEVGFVRFVFGMPEKPTTTVRLFDRGDFYMAHGEDALLAAREVFKTQGVIKYMGPA
 GAKNLQSVVL SKMNFESFVKDLLLVRQYRVEVYKNRAGNKASKENDWYLAYKASPGNLSQFEDILFGNND
 MSASIGVVGVKMSAVDQGRQVGVGYVDSIQRKLGLCEFPDNDQFSNLEALLIQIGPKECVLPGGETAGDM
 GKLRIIQRGGILITERKKADFSTKDIYQDLNRLLLKGGKGEQMNSAVLPEMENQVAVSSLSAVIKFLELL
 SDDSNFGQFELTTFFDSQYMKLDIAAVRALNLFQGSVEDTTGSQSLAALLNKCKTPQGGRLVNQWIKQPL
 MDKNRIEERLNLVEAFVEDAELRQTLQEDLLRRFPDLNRLAKKFQRQAANLQDCYRLYQGINQLPNVIQA
 LEKHEGHQKLLLAVFVTPLTDLRSDFSKFQEMIEITLMDQVENHEFLVKPSFDPNLSELREIMNDLEK
 KMQSTLISAARDLGLDPGKQIKLDSSAQFGYYFRVTCKEEKVLRNNKNFSTVDIQKNGVKFTNSKLTSLN
 EEYTKNKTEYEEAQDAIVKEIVNISSGYVEPMQTLNDVLAQLDAVVSFAHVSNGAPVPPYVRPAILEKGQG
 RIILKASRHACVEVQDEIAFIPNDVYFEKDKQMFHIITGPNMGGKSTYIRQTGVIVLMAQIGCFVPCESA
 EVSIVDCILARVGAGDSQLKGVSTFMAEMLETASILRSATKDSLIIIDELGRGTSTYDGFGLAWAISEYI
 ATKIGAFCMFATHFHELTALANQIPTVNNLHVTALTTEETLTMLYQVKKGVCDQSFGIHVAELANFPKHV
 IECAKQKALELEEFQYIGESQGYDIMEPAAKKCYLEREQGEKIIQEFLSKVKQMPFTEMSEENITIKLQ
 LKAEVIAKNNSFVNEIISRIKVTT

SGPTRRRL**EQKLISEEDLAANDILDYKDDDDKV**

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]