

Product datasheet for RC212391

MSH3 (NM_002439) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	MSH3 (NM_002439) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	MSH3
Synonyms:	DUP; FAP4; MRP1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC212391 representing NM_002439 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCCGATCGCC

ATGTCTCGCCGGAAGCCTGCGTCGGGGCGCCTCGCTGCCTCCAGCTCAGCCCCTGCGAGGCAAGCGGTTT
TGAGCCGATTCTCCAGTCTACGGGAAGCCTGAAATCCACCTCCTCCTCCACAGGTGCAGCCGACCAGGT
GGACCTTGGCGTGCAGCGGCTGCAGCGCCGCGAGCGCCCGCAGCGCCCCAGCGCCCCAGCTCCCGCC
TCCCCGCCAGCTGCCCGGCACATAGCTACAGAAATTGACAGAAGAAAGAAGAGACCATTGGAAAATG
ATGGCCCTGTTAAAAAGAAAGTAAAGAAAGTCCAACAAAAGGAAGGAGGAAGTGATCTGGGAATGTCTGG
CAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAATGTTTCAAAGTCTCTGGAAAAATTGAAAGAATTC
TGCTGCGATTCTGCCCTTCTCAAAGTAGAGTCCAGACAGAATCTCTGCAGGAGAGATTTGCAGTTCTGC
CAAAATGTACTGATTTTGATGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATTGCGAA
ACGTCAAATTAATCAAAAGGACACAACACTTTTTGATCTCAGTCAGTTTGGATCATCAAAACAAGTCAT
GAAAATTTACAGAAAAGTCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCTATACGCCGCTAGAAT
TACAATACATAGAAATGAAGCAGCAGCACAAGATGCAGTTTTGTGTGTGGAATGTGGATATAAGTATAG
ATTCTTTGGGGAAGATGCAGAGATTGCAGCCCGAGAGCTCAATATTTATTGCCATTTAGATCACAACCTTT
ATGACAGCAAGTATACCTACTCACAGACTGTTTGTTCATGTACGCCGCTGGTGGCAAAAGGATATAAGG
TGGGAGTTGTGAAGCAAAGTAACTGAACTGCAGCATTAAAGGCCATTGGAGACAACAGAAGTTCACTTTTTTC
CCGAAAATTGACTGCCCTTTATACAAAATCTACACTTATTGGAGAAGATGTGAATCCCCTAATCAAGCTG
GATGATGCTGTAATGTTGATGAGATAATGACTGATACTTCTACCAGCTATCTTCTGTGCATCTCTGAAA
ATAAGGAAAATGTTAGGGACAAAAAAGGGCAACATTTTTATTGGCATTGTGGGAGTGCAGCCTGCCAC
AGGCGAGTTGTGTTTGTAGTTTCCAGGACTCTGCTTCTCGTTCAGAGCTAGAAACCCGGATGTCAAGC
CTGCAGCCAGTAGAGCTGCTGCTTCTTCCGCTTGTCCGAGCAAACAGAGGCGCTCATCCACAGAGCCA
CATCTGTTAGTGTGCAGGATGACAGAATTCGAGTCGAAAGGATGGATAACATTTATTTGAATACAGCCA
TGCTTTCCAGGCAGTTACAGAGTTTTATGCAAAAGATACAGTTGACATCAAAGGTTCTCAAATTTTCT



GGCATTGTAACTTAGAGAAGCCTGTGATTTGCTCTTTGGCTGCCATCATAAAATACCTCAAAGAATTCA
ACTTGGAAAAGATGCTCTCCAAACCTGAGAATTTAAACAGCTATCAAGTAAAATGGAATTTATGACAAT
TAATGGAAACAACATTAAGGAATCTGAAAATCCTACAGAATCAGACTGATATGAAAACCAAAGGAAGTTG
CTGTGGGTTTTAGACCACACTAAAACCTTCAATTTGGGAGACGGAAGTTAAAGAAGTGGGTGACCCAGCCAC
TCCTTAAATTAAGGAAAATAATGCCCGGCTTGATGCTGTATCGGAAGTTCTCCATTGAGAACTAGTGT
GTTTGGTCAGATAGAAAATCATCTACGTAATTTGCCCGACATAGAGAGGGGACTCTGTAGCATTATCAC
AAAAATGTTCTACCCAAGAGTCTTCTTGATTGTCAAACTTTATATCACCTAAAGTCAGAATTTCAAG
CAATAATACCTGCTGTTAATCCACATTCAGTCAGACTTGCTCCGGACCGTTATTTAGAAATTCCTGA
ACTCCTCAGTCCAGTGGAGCATTACTTAAAGATACTCAATGAACAAGCTGCCAAAGTTGGGGATAAAACT
GAATTATTTAAAGACCTTCTGACTTCCCTTAAATAAAAAAGAGGAAGGATGAAATTCAGGTGTTATTG
ACGAGATCCGAATGCATTTGCAAGAAATACGAAAAATACTAAAAATCCTTCTGCACAATATGTGACAGT
ATCAGGACAGGAGTTTATGATAGAAATAAAGAAGTCTGCTGTATCTTGTATACCAACTGATTGGGTAAG
GTTGGAAGCACAAAAGCTGTGAGCCGCTTTCACCTCCTTTTATTGTAGAAAATTACAGACATCTGAATC
AGCTCCGGGAGCAGCTAGTCTTGACTGCAGTGTGAATGGCTTGATTTTCTAGAGAAAATCAGTGAACA
TTATCACTCCTTGTGTAAGCAGTGCATCACCTAGCAACTGTTGACTGCATTTTCTCCCTGGCCAAGGTC
GCTAAGCAAGGAGATTACTGCAGACCAACTGTACAAGAAGAAAAGAAAATTTGTAATAAAAAATGGAAGGC
ACCTGTGATTGATGTGTTGCTGGGAGAACAGGATCAATATGTCCCAAATAATACAGATTTATCAGAGGA
CTCAGAGAGAGTAATGATAATTACCGGACCAAACATGGGTGAAAAGAGCTCCTACATAAAACAAGTTGCA
TTGATTACCATCATGGCTCAGATTGGCTCCTATGTTTCTGCAGAAGAAGCGACAATTTGGGATTGTGGATG
GCATTTTACAAGGATGGGTGCTGCAGACAATATATAAAGGACAGAGTACATTTATGGAAGAAGTGC
TGACACAGCAGAAATAATCAGAAAAGCAACATCACAGTCTTGGTTATCTTGGATGAACTAGGAAGAGGG
ACGAGCACTCATGATGGAATTGCCATTGCCTATGCTACACTTGAGTATTTTCATCAGAGATGTGAAATCCT
TAACCCTGTTTGTCAACCATTATCCGCCAGTTTGTGAACTAGAAAAAATTACTCACACCAGGTGGGGAA
TTACCACATGGGATTCTTGGTCAGTGAGGATGAAAGCAAAGTGGATCCAGGCGCAGCAGAAACAAGTCCCT
GATTTTGTACCTTCTTTACCAAATAACTAGAGGAATTGCAGCAAGGAGTTATGGATTAATGTGGCTA
AACTAGCAGATGTTCTGGAGAAAATTTGAAGAAAGCAGCTCACAAAGTAAAAGAGCTGGAAGGATTAAT
AAATACGAAAAGAAAGAGACTCAAGTATTTTGCAAAGTTATGGACGATGCATAATGCACAAGACCTGCAG
AAGTGGACAGAGGAGTTCAACATGGAAGAAACACAGACTTCTCTTCTCAT

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC212391 representing NM_002439
 Red=Cloning site Green=Tags(s)

```
MSRRKPASGGLAASSAPARQAVLSRFFQSTGSLKSTSSSTGAADQVDPGAAAAAAAAAAPPAPPAPA
FPPQLPPHIATEIDRRKKRPLENDGPVKKVKKVQKEGGSDLGMSGNSEPKKCLRTRNVSKSLEKLKEF
CCDSALPQSRVQTESLQERFAVLPKCTDFDDISLLHAKNAVSSSESKRQINQKDTLFDLSQFGSSNTSH
ENLQKTASKSANKRSKSIYTPLELQYIEMKQHQHKAVALCECGYKYRFFGEDAEIAARELNIYCHLDHNF
MTASIPTHRLFVHVRRLLVAKGYKGVVVKQTETAALKAIGDNRSSLFSRKLTAlyTKSTLIGEDVNPLIKL
DDAVNVDEIMTDTSTSYLLCISENKENVRDKKGNIFIGIVGVQPATGEVVFDSFQDSASRSELETRMSS
LQPVLELLPSALSEQTEALIHRTASVSVQDDRIRVERMDNIYFEYSHAFQAVTEFYAKDTVDIKGSQIIS
GIVNLEKPVICSLAAIIKYLKEFNLEKMLSKPENFKQLSSKMEFMTINGTTLRNLEILQNQTDMMKTKGSL
LWVLDHTKTSFGRRLKKWVTQPLLKLEINARLDAVSEVLHSESSVFGQIENHLRKLDPDIERGLCSIYH
KKCSTQEFFLIVKTYLHLKSEFQAIIPAVNSHIQSDLLRTVILEIPPELLSPVEHYLKILNEQAQKVGDKT
ELFKDLSDFPLIKKRKDEIQGVIDEIRMHLQEIRKILKNPSAQYVTVSGQEFMIEIKNSAVSCIPTDWVK
VGSTKAVSRFHSPPFIVENYRHLNQLREQLVLDCAEWLDFLEKFSEHYHSLCKAVHHLATVDCIFSLAKV
AKQGDYCRPTVQEERKIVIKNGRHPVIDVLLGEQDQYVPNNTDLSERVMIIITGPNMGKSSYIKQVA
LIITIMAQIGSYVPAEEATIGIVDGIFTRMGAADNIYKQSTFMEELDTAEIIRKATSQSLVILDELGRG
TSTHDGIAIAYATLEYFIRDVKSLLTFVTHYPPVCELEKNYSHQVGNHYMGFLVSEDESKLDPGAAEQVP
DFVFTLYQITRGAARSYGLNVAKLADVPGEILKKAHKSKLEGLINTKRKRLKYFAKLWTMHNQAQDLQ
KWTEEFNMEETQTSLLH
```

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mk8026_f08.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_002439

ORF Size: 3411 bp

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).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: [NM_002439.5](#)

RefSeq Size: 4645 bp

RefSeq ORF: 3414 bp

Locus ID: 4437

UniProt ID: [P20585](#)

Cytogenetics: 5q14.1

Domains: MutS_V, MutS_I, MutS_III, MutS_II

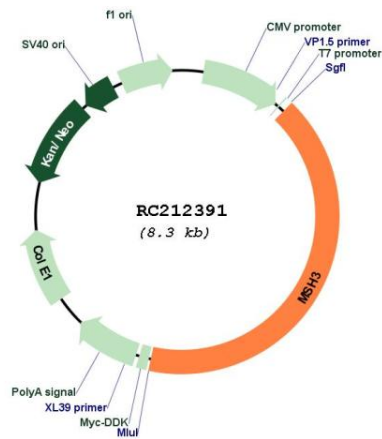
Protein Families: Druggable Genome, Stem cell - Pluripotency

Protein Pathways: Colorectal cancer, Mismatch repair, Pathways in cancer

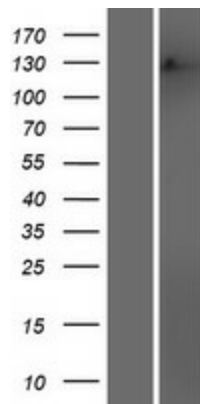
MW: 127.2 kDa

Gene Summary:

The protein encoded by this gene forms a heterodimer with MSH2 to form MutS beta, part of the post-replicative DNA mismatch repair system. MutS beta initiates mismatch repair by binding to a mismatch and then forming a complex with MutL alpha heterodimer. This gene contains a polymorphic 9 bp tandem repeat sequence in the first exon. The repeat is present 6 times in the reference genome sequence and 3-7 repeats have been reported. Defects in this gene are a cause of susceptibility to endometrial cancer. [provided by RefSeq, Mar 2011]

Product images:


Circular map for RC212391



Western blot validation of overexpression lysate (Cat# [LY419328]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC212391 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).