

## Product datasheet for **SC309971**

### MSH3 (NM\_002439) Human Untagged Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** MSH3 (NM\_002439) Human Untagged Clone  
**Tag:** Tag Free  
**Symbol:** MSH3  
**Synonyms:** DUP; FAP4; MRP1  
**Mammalian Cell Selection:** None  
**Vector:** pCMV6-XL5  
**E. coli Selection:** Ampicillin (100 ug/mL)

**Fully Sequenced ORF:** >OriGene sequence for NM\_002439 edited  
 AGATCTGGTACCGAGCGGTGGCCAGGGCAGGTCCCCGTTCTTGCCGATGCCCATGTTCTG  
 GGACACAGCGACGATGCAGTTTAGCGAACCAACCATGACAGCAGCGGGAGGACCTCCGAG  
 CCCGCTCGTTACAGCAGAACGCGCGGTCAAGTTTGGCGCGAAATTGTGGCCGCCCGCCC  
 CCCTCGTCCCCATTTGTGCAGGGCAGGCCCGCCCCCGCCCCGGCGCACGCAGGGTGC  
 CGGCGTGTCTCGCGCCCGCAGACGCTGGGAACTGCGGCCGCGGGCTCGCGCTCCTCGCCA  
 GGCCCTGCGCGCGGGCTGCCATCCTTGCCCTGCCATGTCTCGCCGGAAGCCTGCGTGGG  
 CGGCTCGCTGCCTCCAGCTCAGCCCCTGCGAGGCAAGCGGTTTTGAGCCGATTCTTCCA  
 GTCTACGGGAAGCCTGAAATCCACCTCCTCCTCCACAGGTGCAGCCGACCAGGTGGACCC  
 TGGCGTGCAGCGGTGCAGCGGCCGAGCGGCCGAGCGCCCCAGCGCCCCAGCTCC  
 CGCCTTCCGCCCCAGCTGCCGCGCACGTAGCTACAGAAATTGACAGAAGAAAGAGAG  
 ACCATTGGAAAATGATGGCCTGTAAAAAGAAAGTAAAGAAAGTCCAACAAAAGGAAGG  
 AGGAAGTGATCTGGGAATGTCTGGCAACTCTGAGCCAAAGAAATGTCTGAGGACCAGGAA  
 TGTTTTCAAAGTCTCTGGAAAAATTGAAAGAATTCTGCTGCGATTCTGCCCTTCTCAAAG  
 TAGAGTCCAGACAGAATCTCTGCAGGAGAGATTGCGATTCTGCCAAAATGTAAGTATT  
 TGATGATATCAGTCTTCTACACGCAAAGAATGCAGTTTCTTCTGAAGATTCGAAACGTCA  
 AATTAATCAAAAGGACACAACACTTTTTGATCTCAGTCAGTTTGGATCATCAAATACAAG  
 TCATGAAAATTTACAGAAAAGTCTTCCAAATCAGCTAACAAACGGTCCAAAAGCATCTA  
 TACGCCGCTAGAATTACAATACATAGAAATGAAGCAGCAGCACAAGATGCAGTTTTGTG  
 TGTGGAATGTGGATATAAGTATAGATTCTTTGGGGAAGATGCAGAGATTGCAGCCGAGA  
 GCTCAATATTTATTGCCATTTAGATCACAACTTTATGACAGCAAGTATACCTACTCACAG  
 ACTGTTTGTTCATGTACGCCCTGGTGGCAAAAGGATATAAGGTGGGAGTTGTGAAGCA  
 AACTGAACTGCAGCATTAAAGGCCATTGGAGACAACAGAAGTTCACTCTTTTCCCGGAA  
 ATTGACTGCCCTTATACAAAATCTACACTTATTGGAGAAGATGTGAATCCCCTAATCAA  
 GCTGGATGATGCTGTAATGTTGATGAGATAATGACTGATACTTCTACCAGCTATCTTCT  
 GTGCATCTCTGAAAATAAGGAAAATGTTAGGGACAAAAAAGGGCAACATTTTTATTGG  
 CATTGTGGGAGTGCAGCCTGCCACAGGCGAGGTTGTGTTGATAGTTTCCAGGACTCTGC



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TTCTCGTTCAGAGCTAGAAACCCGGATGTCAAGCCTGCAGCCAGTAGAGCTGCTGCTTCC  
 TTCGGCCTTGTCCGAGCAAAACAGAGGCGCTCATCCACAGAGCCACATCTGTTAGTGTGCA  
 GGATGACAGAATTCGAGTCGAAAGGATGGATAACATTTATTTTGAATACAGCCATGCTTT  
 CCAGGCAGTTACAGAGTTTTATGCAAAAGATACAGTTGACATCAAAGTTCTCAAATTAT  
 TTCTGGCATTGTTAACTTAGAGAAGCCTGTGATTGCTCTTTGGTGCATCATAAAATA  
 CCTCAAAGAATCAACTTGGAAAAGATGCTCTCCAAACCTGAGAATTTTAAACAGCTATC  
 AAGTAAATGGAATTTATGACAATTAATGGAACAACATTAAGGAATCTGGAAATCCAC  
 GAATCAGACTGATATGAAAACCAAGGAAGTTTGTGTGGGTTTTAGACCACACTAAAAC  
 TTCATTTGGGAGACGGAAGTTAAAGAAGTGGGTGACCCAGCCACTCCTTAAATTAAGGGA  
 AATAAATGCCGGCTTGATGCTGTATCGGAAGTTCTCCATTGAGAATCTAGTGTGTTGG  
 TCAGATAGAAAATCATCTACGTAATTTGCCGACATAGAGAGGGGACTCTGTAGCATTTA  
 TCACAAAAATGTTCTACCCAAGAGTTCTTCTTGATTGTCAAACTTTATATCACCTAAA  
 GTCAGAATTTCAAGCAATAATACCTGCTGTTAATCCCACATTCAGTCAGACTTGTCCG  
 GACCGTTATTTAGAAAATCCTGAACTCCTCAGTCCAGTGGAGCATTACTTAAAGATACT  
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 AAAGGTTGGAAGCAGAAAAGCTGTGAGCCGCTTCACTCTCCTTTTATTGTAGAAAATTA  
 CAGACATCTGAATCAGCTCCGGGAGCAGCTAGTCTTGACTGCAGTGTGAATGGCTTGA  
 TTTTCTAGAGAAATTCAGTGAACATTATCACTCCTTGTGTAAAGCAGTGCATCACCTAGC  
 AACTGTTGACTGCATTTTCTCCCTGGCCAAGGTCGTAAGCAAGGAGATTACTGCAGACC  
 AACTGTACAAGAAGAAAGAAAAATTTGTAATAAAAAATGGAAGGCACCCTGTGATTGATG  
 GTTGTGGGAGAACAGGATCAATATGTCCCAAATAATACAGATTTATCAGAGGACTCAGA  
 GAGAGTAATGATAATTACCGGACCAAACATGGGTGAAAAGAGCTCCTACATAAAACAAGT  
 TGCATTGATTACCATCATGGCTCAGATTGGCTCCTATGTTCTGCAGAAGAAGCGACAAT  
 TGGGATTGTGGATGGCATTTCACAAGGATGGGTGCTGCAGACAATATATATAAAGGACA  
 GAGTACATTTATGGAAGAACTGACTGACACAGCAGAAATAATCAGAAAAGCAACATCACA  
 GTCCTTGGTTATCTTGGATGAACTAGGAAGAGGGACGAGCACTCATGATGGAATTGCCAT  
 TGCCTATGCTACACTTGAGTATTCATCAGAGATGTGAAATCCTTAAACCCTGTTTGTCC  
 CCATTATCCGCCAGTTTGTGAACTAGAAAAAATTACTCACACCAGGTGGGGAATTACCA  
 CATGGGATTCTTGGTCAGTGAGGATGAAAGCAAACCTGGATCCAGGCGCAGCAGAAACAAGT  
 CCCTGATTTTGTACCTTCTTTACCAAATAACTAGAGGAATTGCAGCAAGGAGTTATGG  
 ATTAATGTGGCTAAACTAGCAGATGTTCTGGAGAAATTTTGAAGAAAGCAGCTCACAA  
 GTCAAAAGAGCTGGAAGGATTAATAATACGAAAAGAAAGAGACTCAAGTATTTTGCAAA  
 GTTATGGACGATGCATAATGCACAAGACCTGCAGAAGTGGACAGAGGAGTTCAACATGGA  
 AGAAACACAGACTTCTCTTTCATTAATAAATGAAGACTACATTTGTGAACAAAAAATGGA  
 GAATTAATAAATACCAACTGTACAAAATAACTCTCCAGTAACAGCCTATCTTTGTGTGACA  
 TGTGAGCATAAAAATGACCATGGTATATTCCTATTGGAAACAGAGAGGTTTTTCTGAA  
 GACAGTCTTTTTCAAGTTTCTGTCTTCTAACTTTTCTACGTATAAACACTCTTGAATAG  
 ACTTCCACTTTGTAATTAGAAAATTTTATGGACAGTAAGTCCAGTAAAGCCTTAAGTGGC  
 AGAATATAAATCCCAAGCTTTTGGAGGGTATATAAAAAATTTACTTGATTTTTTATTTG  
 TTTTCAGTTCAGATAAATGGCAACTGGGTGAATCTGGCAGGAATCTATCCATTGAACTAAA  
 ATAATTTTATTATGCAACCAGTTTATCCACCAAGAACATAAGAATTTTTTATAAGTAGAA  
 AGAATTGGCCAGGCATGGTGGCTCATGCCTGTAATCCCAGCACTTTGGGAGGCCAAGGTA  
 GGCAGATCACCTGAGGTCAGGAGTTCAAGACCAGCCTGGCCAACATGGCAAAACCCCATC  
 TTTACTAAAAATATAAAGTACATCTCTACTAAAAATACGAAAAAATTTGGCTGGGCATGGT  
 GCGCACACCTGTAGTCCAGCTACTCCGAGGCTGAGGCAGGAGAATCTCTTGGACCTG  
 GGAGGCGGAGGTTGCAATGAGCCGAGATCACGTCACTGCACTCCAGCTTGGGCAACAGAG  
 CAAGACTCCATCTCAAAAAAAAAAAAAAAAAAAAA

**Restriction Sites:**

Please inquire

<b>ACCN:</b>	NM_002439
<b>Insert Size:</b>	4500 bp
<b>OTI Disclaimer:</b>	<p>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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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. <a href="#">More info</a></p>
<b>OTI Annotation:</b>	The ORF of this clone has been fully sequenced and found to be a perfect match to NM_002439.2.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<a href="#">NM_002439.2</a> , <a href="#">NP_002430.2</a>
<b>RefSeq Size:</b>	4645 bp
<b>RefSeq ORF:</b>	3414 bp
<b>Locus ID:</b>	4437
<b>UniProt ID:</b>	<a href="#">P20585</a>
<b>Cytogenetics:</b>	5q14.1
<b>Domains:</b>	MutS_V, MutS_I, MutS_III, MutS_II
<b>Protein Families:</b>	Druggable Genome, Stem cell - Pluripotency
<b>Protein Pathways:</b>	Colorectal cancer, Mismatch repair, Pathways in cancer

**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]