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Product datasheet for MC222681

Msh2 (NM_008628) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Msh2 (NM_008628) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Msh2
Synonyms:	AI788990
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin

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Fully Sequenced ORF:

>MC222681 representing NM_008628
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCGGTGCAGCCTAAGGAGACGCTGCAGTTGGAAGGCGCGGCCGAGGCGGGCTTCGTGCGCTTCTTTG
AGGGCATGCCGGAGAAGCCGAGCACCACGGTGCGCCTCTTCGACCGCGGCGACTTTTACACGGCGCACGG
AGAGGACGCGCTGCTGGCGGCCCGCGAGGTGTTCAAGACCCAGGGCGTGATCAAGTACATGGGGCCGGCA
GGGAGTAAGACCCTGCAGAGTGTTGTGCTTAGCAAGATGAACTTTGAGTCTTTCGTGAAAGATCTTCTTC
TGGTTCGCCAGTATCGAGTTGAAGTTTATAAGAATAAAGCTGGAAATAAGGCGTCTAAGGAGAATGAGTG
GTATCTGGCATTTAAGGCTTCTCCCGGCAATCTTTCTCAGTTTGAAGACATCCTGTTTGGTAACAATGAC
ATGTCAGCTTCCGTTGGCGTTATGGGTATTAAAATGGCCGTGGTTGATGGTCAAAGACATGTTGGAGTTG
GGTATGTGGATTCCACCCAGAGGAAGCTAGGCTTGTGTGAGTTCCCCGAGAATGATCAGTTCTCCAATCT
CGAGGCTCTTCTGATTCAGATTGGACCAAAGGAATGCGTTTTACCAGGAGGAGAGACTACTGGAGACATG
GGGAAACTGAGGCAGGTTATCCAGAGAGGAGGGATTCTGATCACAGAAAGAAAGAGAGCCGACTTTTCCA
CTAAAGACATTTATCAGGATCTCAACCGGTTACTGAAAGGCAAAAAAGGAGAACAGATAAATAGTGCTGC
CCTACCAGAGATGGAGAATCAGGTTGCAGTTTCATCACTATCTGCAGTAATCAAGTTTTTAGAACTCTTA
TCAGACGATTCAAATTTTGGGCAGTTTGAACTGGCCACTTTTGACTTCAGCCAGTACATGAAGTTGGACA
TGGCAGCAGTTAGAGCCCTCAACCTTTTCCAGGGTTCTGTTGAAGACACCACTGGCTCTCAGTCTCTGGC
CGCATTATTGAATAAATGCAAAACTGCTCAAGGACAAAGATTGGTTAACCAGTGGATCAAGCAGCCGCTC
ATGGATAGGAACAGGATAGAGGAGAGGTTAAATTTAGTGGAAGCTTTTGTCGAGGATTCAGAACTGAGGC
AGAGTTTACAGGAGGATTTGCTTCGCCGGTTTCCAGACCTTAACCGGCTTGCCAAGAAATTCCAGAGACA
AGCAGCGAATTTACAAGACTGTTACCGACTGTATCAGGGTATTAACCAGCTCCCCAGCGTCATCCAGGCT
CTGGAGAAATACGAAGGAAGACACCAGGCACTGTTGTTGGCAGTTTTTGTGACTCCTCTTATTGATCTTC
GTTCTGATTTTTCAAAATTTCAAGAAATGATAGAAACAACTTTAGATATGGATCAGGTGGAAAACCACGA
GTTCCTTGTAAAACCTTCATTTGATCCTAACCTGAGTGAACTAAGAGAAGTCATGGATGGCCTGGAGAAG
AAGATGCAGTCCACCTTAATAAATGCAGCCCGGGGGCTCGGATTGGATCCTGGCAAACAGATTAAATTGG
ACTCCAGTGCACAGTTTGGATATTATTTCCGTGTAACCTGCAAGGAAGAGAAAGTGCTTCGCAACAACAA
GAACTTCAGCACAGTGGACATCCAGAAGAATGGCGTGAAGTTTACCAACAGTGAATTGTCCTCTTTAAAT
GAAGAATATACTAAGAACAAAGGCGAGTATGAAGAGGCCCAGGATGCCATTGTTAAAGAAATTGTCAATA
TTTCCTCAGGCTACGTAGAGCCAATGCAGACGCTCAACGATGTGCTGGCTCACTTAGACGCCATTGTTAG
CTTCGCTCATGTGTCAAACGCAGCACCCGTTCCTTATGTACGACCAGTCATCTTGGAGAAAGGAAAAGGG
AGAATTATATTGAAAGCCTCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAGTTGCATTTATTCCAAATG
ACGTGCACTTTGAAAAAGATAAACAGATGTTCCACATCATTACTGGTCCCAATATGGGAGGTAAATCAAC
ATACATTCGTCAGACCGGGGGTGATTGTACTCATGGCCCAAATCGGGTGTTTTGTGCCCTGTGAGTCGGCA
GAAGTGTCCATTGTGGATTGCATCCTTGCTCGAGTCGGGGCTGGTGACAGTCAACTGAAAGGCGTCTCCA
CATTCATGGCTGAAATGCTGGAGACTGCTTCCATCCTCAGGTCAGCAACCAAAGACTCCTTAATAATCAT
TGATGAGCTGGGAAGAGGAACCTCTACCTATGATGGATTTGGGTTAGCATGGGCTATATCAGATTACATT
GCAACGAAGATTGGTGCCTTTTGCATGTTTGCCACCCATTTTCATGAACTTACTGCTTTGGCCAACCAAA
TACCAACTGTTAATAATCTACATGTCACAGCGCTCACTACTGAGGAGACCCTAACTATGCTTTACCAAGT
GAAAAAAGGTGTCTGTGATCAGAGTTTCGGGATTCACGTGGCTGAGCTCGCTAACTTCCCGAGGCACGTG
ATAGCGTGCGCCAAGCAGAAGGCTCTAGAGCTTGAAGAATTTCAGAACATTGGAACCTCGCTGGGATGTG
ACGAAGCCGAGCCGGCTGCAAAGAGACGCTGCCTGGAAAGAGAGCAAGGTGAGAAAATTATTCTGGAGTT
CCTGTCGAAGGTCAAGCAGGTGCCCTTTACTGCCATGTCGGAGGAGAGCATCTCCGCGAAGCTGAAGCAA
CTGAAAGCCGAGGTGGTCGCAAAGAACAACAGCTTCGTAAACGAGATCATTTCACGGATAAAGGCTCCGG
CTCCGTGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI

ACCN:	NM_008628
Insert Size:	2808 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
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.
RefSeq:	NM_008628.2, NP_032654.1
RefSeq Size:	3056 bp
RefSeq ORF:	2808 bp
Locus ID:	17685
UniProt ID:	P43247
Cytogenetics:	17 57.87 cM
Gene Summary:	Component of the post-replicative DNA mismatch repair system (MMR). Forms two different heterodimers: MutS alpha (MSH2-MSH6 heterodimer) and MutS beta (MSH2-MSH3 heterodimer) which binds to DNA mismatches thereby initiating DNA repair. When bound, heterodimers bend the DNA helix and shields approximately 20 base pairs. MutS alpha recognizes single base mismatches and dinucleotide insertion-deletion loops (IDL) in the DNA. MutS beta recognizes larger insertion-deletion loops up to 13 nucleotides long. After mismatch binding, MutS alpha or beta forms a ternary complex with the MutL alpha heterodimer, which is thought to be responsible for directing the downstream MMR events, including strand discrimination, excision, and resynthesis. Recruits DNA helicase MCM9 to chromatin which unwinds the mismatch containg DNA strand. ATP binding and hydrolysis play a pivotal role in mismatch repair functions. The ATPase activity associated with MutS alpha regulates binding similar to a molecular switch: mismatched DNA provokes ADP-->ATP exchange, resulting in a discernible conformational transition that converts MutS alpha into a sliding clamp capable of hydrolysis-independent diffusion along the DNA backbone. This transition is crucial for mismatch repair. MutS alpha may also play a role in DNA homologous recombination repair. In melanocytes may modulate both UV-B-induced cell cycle regulation and apoptosis.[UniProtKB/Swiss-Prot Function]