

Product datasheet for **MR211249**

Msh2 (NM_008628) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Msh2 (NM_008628) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Msh2
Synonyms:	A1788990
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



[View online »](#)

ORF Nucleotide Sequence:

>MR211249 ORF sequence
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGCGGTGCAGCCTAAGGAGACGCTGCAGTTGGAAGGCGGCCGAGGCGGGCTTCGTGCGCTTCTTTG
 AGGGCATGCCGGAGAAGCCGAGCACACCGTGCCTCTTCGACCGCGGGACTTTTACACGGCGCACGG
 AGAGGACGCGCTGCTGGCGGCCCGAGGTTGTTCAAGACCCAGGCGTGATCAAGTACATGGGGCCGGCA
 GGGAGTAAGACCCTGCAGAGTGTGTGCTTAGCAAGATGAACTTTGAGTCTTTCGTGAAAGATCTTCTTC
 TGGTTCGCCAGTATCGAGTTGAAGTTTATAAGAATAAAGCTGAAATAAGGCGTCTAAGGAGAATGAGTG
 GTATCTGGCATTAAAGGCTTCTCCCGCAATCTTCTCAGTTTGAAGACATCCTGTTTGGTAACAATGAC
 ATGTCAGCTTCCGTTGGCGTTATGGGTATTAATAAGGCGGTGTTGATGGTCAAAGACATGTTGGAGTTG
 GGTATGTGGATCCACCCAGAGGAAGCTAGGCTTGTGTGAGTTCCCGAGAATGATCAGTTCTCCAATCT
 CGAGGCTCTTCTGATTGAGTTGACCAAAGGAATGCGTTTTACCAGGAGGAGAGACTACTGGAGACATG
 GGGAAACTGAGGCAGGTTATCCAGAGAGGAGGATTCTGATCACAGAAAGAAAGAGAGCCGACTTTTCCA
 CTAAGACATTTATCAGGATCTCAACCGGTTACTGAAAGGCAAAAAGGAGAACAGATAAATAGTCTGC
 CCTACCAGAGATGGAGAATCAGGTTGCAGTTTCATCACTATCTGCAGTAATCAAGTTTTTGAAGCTTTA
 TCAGACGATCAAATTTTGGCAGTTTGAAGTGGCCACTTTTACTTCAGCCAGTACATGAAGTTGGACA
 TGGCAGCAGTTAGAGCCCTCAACCTTTCCAGGGTTCTGTTGAAGACACCACTGGCTCTCAGTCTCTGGC
 CGCATTATTGAATAAATGCAAACTGCTCAAGGACAAAGATTGGTTAACCAGTGGATCAAGCAGCCGCTC
 ATGGATAGGAACAGGATAGAGGAGAGGTTAAATTTAGTGAAGCTTTTGTGAGGATTGAGAAGTGGAGC
 AGAGTTTACAGGAGGATTTGCTTCCCGGTTCCAGACTTAAACCGCTTCCAGAAATCCAGAGACA
 AGCAGCGAATTTACAAGACTGTTACCGACTGTATCAGGGTATTAACCAGCTCCCCAGCGTATCCAGGCT
 CTGGAGAAATACGAAGGAAGACACCAGGCACTGTTGTTGGCAGTTTTTGTGACTCCTCTTATTGATCTTC
 GTTCTGATTTTTCAAATTTCAAGAAATGATAGAAACAACCTTTAGATATGGATCAGGTGGAAAACACGA
 GTTCTTGTAAAACCTTCATTTGATCCTAACCTGAGTGAAGTAAAGAGAAGTATGGATGGCCTGGAGAAG
 AAGATGCAGTCCACCTTAATAAATGCAGCCGGGGCTCGGATTGGATCCTGGCAAACAGATTAAATGG
 ACTCCAGTGCACAGTTTGGATATATTTCCGTGAACCTGCAAGGAAGAGAAAGTCTTCGCAACAACAA
 GAACCTCAGCACAGTGGACATCCAGAAGAATGGCGTGAAGTTACCAACAGTGAATTGCCTCTTTAAAT
 GAAGAATACTAAGAACAAGGCGAGTATGAAGAGGCCAGGATGCCATTGTTAAAGAAATGTCAATA
 TTTCTCAGGCTACGTAGAGCAATGCAGACGCTCAACGATGTGCTGGCTCACTTAGACGCCATTGTTAG
 CTTGCTCATGTGTCAAACGCAGCACCCGTTCTTATGTACGACCAAGTCACTTGGAGAAAGGAAAAGGG
 AGAATTATATTGAAAGCCTCCAGGCATGCTTGTGTTGAAGTTCAAGATGAAGTTGCATTTATCCAATG
 ACGTGCATTTGAAAAGATAAACAGATGTTCCACATCTACTGGTCCCAATATGGGAGGTAATCAAC
 ATACATTCGTGACACCGGGTATTGACTCATGGCCAAATCGGGTGTGTTGTGCCCTGTGAGTCGGCA
 GAAGTGTCCATTGTGGATTGCATCCTTGCTCGAGTCGGGGCTGGTACAGTCAACTGAAAGGCGTCTCCA
 CATTGATGGCTGAAATGCTGGAGACTGCTTCCATCCTCAGGTGAGCAACCAAGACTCCTTAATAATCAT
 TGATGAGCTGGGAAGAGGAACCTCTACCTATGATGGATTTGGGTTAGCATGGGCTATATCAGATTACAT
 GCAACGAAGATTGGTGCCTTTTGATGTTTGCACCCATTTTCATGAACCTACTGCTTTGGCCAACCAAA
 TACCAACTGTTAATAATCTACATGTCACAGCGCTCACTACTGAGGAGACCCTAACTATGCTTTACCAAGT
 GAAAAAAGGTGTCTGTGATCAGAGTTTCCGGATTACGTTGGTGAAGTCTGCTAAGTCTCCGAGGCAGTG
 ATAGCGTGCAGCAAGCAGAAGGCTCTAGAGCTTGAAGAATTTGAGAATTTGAACTCGCTGGGATGTG
 ACGAAGCCGAGCCGGCTGCAAAGAGACGCTGCCTGAAAGAGAGCAAGGTGAGAAAATTTCTGGAGTT
 CCTGTGCAAGTTCAAGCAGGTGCCCTTACTGCCATGTCGGAGGAGAGCATCTCCGGAAGCTGAAGCAA
 CTGAAAGCCGAGGTGGTGCAAAAGAACAACAGCTTCGTAACGAGATCATTTACGGATAAAGGCTCCGG
 CTCGG

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR211249 protein sequence
 Red=Cloning site Green=Tags(s)

MAVQPKETLQLEGAAEAGFVRRFFEGMPEKPSTTVRLFDRGDFYTAHGEDALLAAREVFKTQGVIKYMGPA
 GSKTLQSVVLKMNFEFVKDLLLVRQYRVEVYKNKAGNKASKENEWYLAFAKSPGNLSQFEDILFGNND
 MSASVGMGIKMAVVDGQRHVGVYVDSTQRKLGCEFPENDQF SNLEALLIQIGPKCEVLPGETTGDM
 GKLRQVIQRGGILITERKRADFSTKDIYQDLNRLKGGKGEQINSAALPEMENQVAVSSLSAVIKFLELL
 SDDSNFGQFELATFDFSQYMKLDMAAVRALNLFQGSVEDTTGSQSLAALLNKCKTAQGQRLVNQWIKQPL
 MDRNRIEERLNLVEAFVDESELRQSLQEDLLRRFPDLNRLAKKFQRQAANLQDCYRLYQGINQLPSVIAQ
 LEKYEGRHQALLLAVFVTPIDLRSDFSKFQEMIETTLDMQVENHEFLVKPSFDPNLSELREVMGLEK
 KMQSTLINAARGLGLDPGKQIKLDSSAQFGYYFRVTCKEEKVLRNNKNFSTVDIQKNGVKFTNSELSSLN
 EETYNKNGEYEEAQDAIVKEIVNISGGYVEPMQTLNDVLAHLDAIVSFAHVSNAAPVYVRPVILEKGG
 RIILKASRHACVEVQDEVAFIPNDVHFEDKQMFHIITGPNMGGKSTYIRQTGVIIVLMAQIGCFVPCESA
 EVSIVDCILARVGAGDSQLKGVSTFMAEMLETASILRSATKDSLIIIDELGRGTSTYDGFGLAWAISDYI
 ATKIGAFCMFATHFELTALANQIPTVNNLHVTALTTEETLTMLYQVKKGVCDQSFGIHVAELANFPRHV
 IACAQKALELEEFQNIIGTSLGCEAEPAAKRRCLEREQGEKIIIEFLSKFKQVPFTAMSEESISAKLKQ
 LKAEVVAKNNSFVNEIISRIPAP

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

Cloning Scheme:



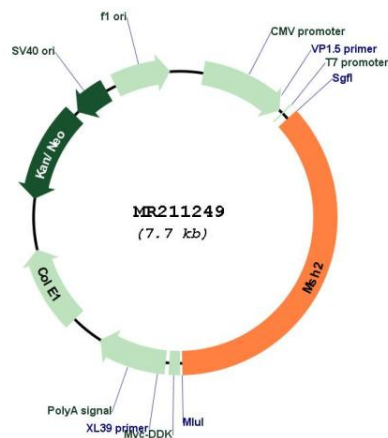
ACCN: NM_008628

ORF Size: 2808 bp

OTI Disclaimer:	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:	<ol style="list-style-type: none"> 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_008628.1 , 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
MW:	104.2 kDa

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 containing 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]

Product images:


Circular map for MR211249