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Product datasheet for MR210511

Mlh1 (NM_026810) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Mlh1 (NM_026810) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Mlh1
Synonyms:	1110035C23Rik; AI317206; AI325952; AI561766
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

ORF Nucleotide Sequence:

>MR210511 ORF sequence
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGCGTTTGTAGCAGGAGTTATTCGGCGTCTGGACGAGACGGTGGTGAACCGCATAGCGGCGGGGGAAG
TCATTCAGCGGCCGGCCAATGCTATCAAAGAGATGATAGAAAACTGTTTAGATGCAAAATCTACAAATAT
TCAAGTGGTTGTTAAGGAAGGTGGCCTGAAGCTAATTCAGATCCAAGACAATGGCACTGGAATCAGGAAG
GAAGATCTGGATATTGTGTGTGAGAGGTTCACTACGAGTAAACTGCAGACTTTTGAGGATTTAGCCAGTA
TTTCTACCTATGGCTTTCGTGGTGAGGCATTGGCAAGCATAAGCCATGTGGCCCATGTCACTATTACAAC
CAAAACAGCTGATGGGAAATGTGCGTACAGAGCAAGTTACTCAGATGGAAAGCTGCAAGCCCCTCCTAAA
CCCTGTGCAGGCAACCAGGGCACCCTGATCACGGTGGAAGACCTTTTTTACAACATAATCACAAGGAGGA
AAGCTTTAAAAAATCCAAGTGAAGAGTACGGAAAAATTTTGGAAGTTGTTGGCAGGTATTCAATACACAA
TTCAGGCATTAGTATCTCAGTTAAAAAACAAGGTGAGACAGTATCTGATGTCAGAACACTGCCCAATGCC
ACAACCGTGGACAACATTCGCTCCATCTTTGGAAATGCGGTTAGTCGAGAACTGATAGAAGTTGGGTGTG
AGGATAAAACCCTAGCTTTCAAAATGAATGGCTATATATCGAATGCAAACTATTCAGTGAAGAAGTGCAT
TTTCCTACTCTTCATCAACCACCGTCTGGTAGAATCAGCTGCCTTGAGAAAAGCCATTGAAACTGTATAT
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GCAGCACATTGAGAGCAAGCTGCTGGGCTCCAATTCCTCCAGGATGTATTTCACCCAGACCTTGCTTCCA
GGACTTGCTGGGCCCTCTGGGGAGGCAGCTAGACCCACGACAGGGGTGGCTTCCTCATCCACTAGTGGAA
GTGGCGACAAGGTCTACGCTTACCAGATGGTCCGTACGGACTCCCGGGATCAGAAGCTTGACGCCTTTCT
GCAGCCTGTAAGCAGCCTTGTGCCCAGCCAGCCCCAGGACCCTGCCCCTGTCCGAGGGGCCAGGACAGAG
GGCTCTCCTGAAAGGGCCACGCGGGAGGATGAGGAGATGCTTGCTCTCCCAGCCCCCGCTGAAGCAGCTG
CTGAGAGTGAGAACTTGGAGAGGGAATCACTAATGGAGACTTCAGACACAGCCCAGAAAGCGGCACCCAC
TTCCAGTCCAGGAAGCTCCAGAAAGAGACATCGGGAGGACTCTGATGTGGAAATGGTGGAAAATGCTTCC
GGGAAGGAAATGACAGCTGCTTGCTACCCCAGGAGGAGGATCATTAACCTCACCAGCGTCTTGAGTCTCC
AGGAAGAGATTAGTGAGCGGTGCCATGAGACTCTCCGGGAGATGCTCCGTAACCATTCCTTTGTGGGCTG
TGTGAATCCTCAGTGGGCCTTGGCACAGCACCAGACCAAGCTATACCTCCTCAACACTACCAAGCTCAGT
GAAGAGCTGTTCTACCAGATACTCATTTATGATTTTGCCAACTTTGGTGTTCTGAGGTTATCGGAACCAG
CGCCACTCTTCGACCTGGCCATGCTGGCCTTAGACAGTCCTGAAAGTGGCTGGACAGAGGACGACGGCCC
GAAGGAAGGGCTTGCAGAGTACATTGTCGAGTTTCTGAAGAAGAAAGCGGAGATGCTTGCAGACTATTTC
TCTGTGGAGATCGATGAGGAAGGGAACCTGATCGGATTACCTCTTCTGATTGACAGCTATGTGCCACCTT
TGGAGGGACTGCCTATCTTCATTCTTCGACTGGCCACTGAGGTGAATTGGGATGAAGAAAAGGAGTGTTT
TGAAAGTCTCAGTAAAGAATGTGCTATGTTTTACTCCATTCGGAAGCAGTATATACTGGAGGAGTCGACC
CTCTCAGGCCAGCAGAGTGACATGCCTGGCTCCACGTCAAAGCCCTGGAAGTGGACTGTGGAGCACATTA
TCTATAAAGCCTTCCGCTCACACCTCCTACCTCCGAAGCATTTCACAGAAGATGGCAATGTCCTGCAGCT
TGCCAACCTGCCAGATCTATACAAAGTCTTTGAGCGGTGT

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

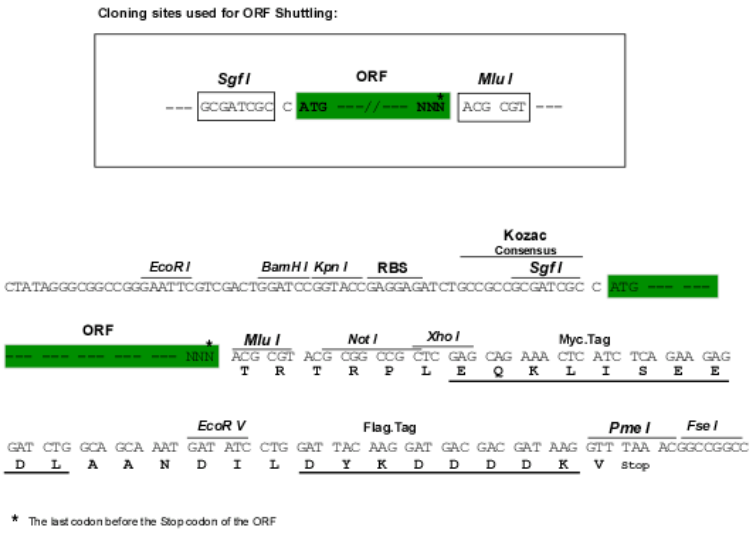
>MR210511 protein sequence
Red=Cloning site Green=Tags(s)

MAFVAGVIRRLDETVVNRIAAGEVIQRPANAIKEMIENCLDAKSTNIQVVVKEGGLKLIQIQDNGTGIRK
EDLDIVCERFTTSKLQTFEDLASISTYGFRGEALASISHVAHVTITTKTADGKCAYRASYSDGKLQAPPK
PCAGNQGTLITVEDLFYNIITRRKALKNPSEEYGKILEVVGRYSIHNSGISISVKKQGETVSDVRTLPNA
TTVDNIRSIFGNAVSRELIEVGCEDKTLAFKMNGYISNANYSVKKCIFLLFINHRLVESAALRKAIETVY
AAYLPKNTHPFLYLSLEISPQNVDVNVHPTKHEVHFLHEESILQRVQQHIESKLLGSNSSRMYFTQTLLP
GLAGPSGEAARPTTGVASSSTSGSGDKVYAYQMVRTDSRDQKLDAFLQPVSSLVPSQPQDPAPVRGARTE
GSPERATREDEEMLALPAPAEAAAESENLERESLMETSDTAQKAAPTSSPGSSRKRHREDSDVEMVENAS
GKEMTAACYPRRRIINLTSVLSLQEEISERCHETLREMLRNHSFVGCVNPQWALAQHQTKLYLLNTTKLS
EELFYQILIYDFANFGVLRLSEPAPLFDLAMLALDSPESGWTEDDGPKEGLAEYIVEFLKKKAEMLADYF
SVEIDEEGNLIGLPLLIDSYVPPLEGLPIFILRLATEVNWDEEKECFESLSKECAMFYSIRKQYILEEST
LSGQQSDMPGSTSKPWKWTVEHIIYKAFRSHLLPPKHFTEDGNVLQLANLPDLYKVFERC

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_026810

ORF Size: 2283 bp

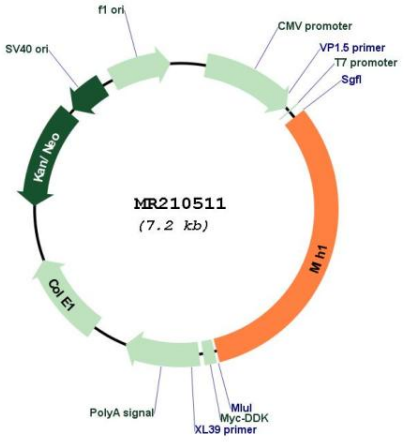
OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially 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:	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_026810.1, NP_081086.1
RefSeq Size:	2598 bp
RefSeq ORF:	2283 bp
Locus ID:	17350
UniProt ID:	Q9JK91
Cytogenetics:	9 60.92 cM
MW:	84.7 kDa
Gene Summary:	Heterodimerizes with Pms2 to form MutL alpha, a component of the post-replicative DNA mismatch repair system (MMR). DNA repair is initiated by MutS alpha (Msh2-Msh6) or MutS beta (MSH2-MSH3) binding to a dsDNA mismatch, then MutL alpha is recruited to the heteroduplex. Assembly of the MutL-MutS-heteroduplex ternary complex in presence of RFC and PCNA is sufficient to activate endonuclease activity of Pms2. It introduces single-strand breaks near the mismatch and thus generates new entry points for the exonuclease EXO1 to degrade the strand containing the mismatch. DNA methylation would prevent cleavage and therefore assure that only the newly mutated DNA strand is going to be corrected. MutL alpha (Mlh1-Pms2) interacts physically with the clamp loader subunits of DNA polymerase III, suggesting that it may play a role to recruit the DNA polymerase III to the site of the MMR. Also implicated in DNA damage signaling, a process which induces cell cycle arrest and can lead to apoptosis in case of major DNA damages. Heterodimerizes with Mlh3 to form MutL gamma which plays a role in meiosis (By similarity).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR210511