

Product datasheet for **KN310420**

Msh2 Mouse Gene Knockout Kit (CRISPR)

Product data:

Product Type: Knockout Kits (CRISPR)
Format: 2 gRNA vectors, 1 GFP-puro donor, 1 scramble control
Donor DNA: GFP-puro
Symbol: Msh2
Locus ID: 17685
Components: **KN310420G1**, Msh2 gRNA vector 1 in pCas-Guide CRISPR vector (GE100002), Target Sequence: GGCTTCGTGCGCTTCTTTGA
KN310420G2, Msh2 gRNA vector 2 in pCas-Guide CRISPR vector (GE100002), Target Sequence: ACCGTGGTGTCTCGGCTTCTC
KN310420D, donor DNA containing left and right homologous arms and GFP-puro functional cassette.

Homologous arm and GFP-puro sequences:

pUC vector backbone in gray; **Left arm sequence in blue**; **GFP-puro in green**; **Right arm in violet**

```
AAGGCGAGTT ACATGATCCC CCATGTTGTG CAAAAAAGCG GTTAGCTCCT TCGGTCCTCC GATCGTTGTC
AGAAGTAAGT TGGCCGAGT GTTATCACTC ATGGTTATGG CAGCACTGCA TAATTCTCTT ACTGTCATGC
CATCCGTAAG ATGCTTTTCT GTGACTGGTG AGTACTCAAC CAAGTCATTC TGAGAATAGT GTATGCCGGC
ACCGAGTTGC TCTTGCCCGG CGTCAATACG GGATAATACC GCGCCACATA GCAGAATTTT AAAAGTGCTC
ATCATTGGAA AACGTTCTTC GGGCGAAAA CTCTCAAGGA TCTTACCCTG GTTGAGATCC AGTTCGATGT
AACCCACTCG TGCACCCAAC TGATCTTCAG CATCTTTTAC TTTACCAGC GTTTCTGGGT GAGCAAAAAC
AGGAAGGCAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT GAATACTCAT ACTCTTCCTT
TTTCAATATT ATTGAAGCAT TTATCAGGGT TATTGTCTCA TGAGCGGATA CATATTTGAA TGTATTTAGA
AAAATAAACA AATAGGGGTT CCGCGCACAT TTCCCGAAA AGTGCCACCT GACGTCTAAG AAACCATTAT
TATCATGACA TTAACCTATA AAAATAGGCG TATCACGAGG CCCTTTCGGG TCGCGGTTT CGGTGATGAC
GGTAAAACC TCTGACACAT GCAGCTCCCG TTGACGGTCA CAGCTTGCT GTAAAGCGAT GCCGGGAGCA
GACAAGCCCG TCAGGGCGCG TCAGCGGGTG TTGGCGGGTG TCGGGGCTGG CTTAACTATG CGGCATCAGA
GCAGATTGTA CTGAGAGTGC ACCATAAAAT TGTAACGTT AATATTTTGT TAAAATTCGC GTTAAATTTT
TGTTAAATCA GCTCATTTTT TAACCAATAG GCCGAAATCG GCAAAATCCC TTATAATCA AAAGAATAGC
CCGAGATAGG GTTGAGTGTT GTTCCAGTTT GGAACAAGAG TCCACTATTA AAGAACGTGG ACTCCAACGT
CAAAGGGCGA AAAACCGTCT ATCAGGGCGA TGGCCCACTA CGTGAACCAT CACCAAATC AAGTTTTTTG
GGTTCGAGGT GCCGTAAAGC ACTAAATCGG AACCCATAAG GGAGCCCCCG ATTTAGAGCT TGACGGGGAA
AGCCGGCGAA CGTGCGGAGA AAGGAAGGGA AGAAAGCGAA AGGAGCGGGC GCTAGGGCGC TGGCAAGTGT
AGCGGTACG CTGCGGTAA CCACCACACC CGCCGCGCTT AATGCGCCGC TACAGGGCGC GACTATGGT
TGCTTTGACG TATGCGGTGT GAAATACCGC ACAGATCGCT AAGGAGAAAA TACCGCATCA GGCGCCATTC
GCCATTCAGG CTGCGCAACT GTTGGGAAGG GCGATCGGTG CGGGCCTCTT CGCTATTACG CCAGCTGGCG
AAAGGGGAT GTGCTGCAAG GCGATTAAGT TGGTAACGC CAGGGTTTTC CCAGTACGA CGTTGTA AAA
CGACGGCCAG TGAATTGGAG GCTACAGTCA GTGGAGAGGA CTTTCACAGG CTGTCGCCGT GCTCATTTGA
```



[View online »](#)

TAACTGCCCG TTATTCATGC GACACGCCTC AGAGGCCCCC CCGAGTGCTT GGATTAAGGG CATGCGCCAC
 CACGCTCGGC TTGCCAAGTG TCTATTGGAT GAATTCGTCA ACCGATGGGC GAAATGCAAA ACTGGGTCAG
 CAAGAGGTTG TGCAGAATAT ACCTGAAATT TTACCTATGG CAGTTTGAC TGCAAGTGTA TAACGCACAC
 TCAAGGCTGG GTGGGGGAAA AAAGATAGTT CTTTGTTTAC AAGTTCCTTG TGATTTCACT CTTACGTTTC
 CGGTCACCTG ATAAAACAAA TTCCTAGCTG ACCCCGCCTA GCACACCTAC CCACCCACCA GCGGACTTG
 AAAGCGCAGC CTCTGGAAGG CCTGCAAGGC TGCAGAAGTC GGACGCATGC GCAGTAGCTA GAGTCCTAGA
 GTTCGCGGGA AGCTGGGACC TTGCTCGCTT ATGATTGGCT ACTGCGGTAG ACTCCACCA ACCGGGGCGC
 AGCGCTGCAT GGTGATTGGG CGAGCCACCA GAGGCCGGAC GAGGTTTAGG GGGCGAGGTT GGGGAGGCGG
 GAAACGAGCG GGCCAGCGCA GGGTCGCTCT GTGCTCTAGT GGTGTTGGTG TGGAGCGGCT CGGAAACTAG
 CATGGAGAGC GACGAGAGCG GCCTGCCCGC CATGGAGATC GAGTGCCGCA TCACCGGCAC CCTGAACGGC
 GTGGAGTTCG AGCTGGTGGG CGGCGGAGAG GGCACCCCGC AGCAGGGCCG CATGACCAAC AAGATGAAGA
 GCACCAAAGG CGCCCTGACC TTCAGCCCTT ACCTGCTGAG CCACGTGATG GGCTACGGCT TCTACCACTT
 CGGCACCTAC CCCAGCGGCT ACGAGAACC CTTCCTGCAC GCCATCAACA ACGGCGGCTA CACCAACACC
 CGCATCGAGA AGTACGAGGA CGGCGGCGTG CTGCACGTGA GCTTCAGCTA CCGCTACGAG GCCGGCCGCG
 TGATCGGCGA CTTCAAGGTG ATGGGCACCG GCTTCCCGA GGACAGCGTG ATCTTACCAC ACAAGATCAT
 CCGCAGCAAC GCCACCGTGG AGCACCTGCA CCCCATGGGC GATAACGATC TGGATGGCAG CTTACCCCGC
 ACCTTCAGCC TGCGCGACGG CGGCTACTAC AGCTCCGTGG TGGACAGCCA CATGCACCTC AAGAGCGCCA
 TCCACCCAG CATCCTGCAG AACGGGGGCC CCATGTTTCG CTTCCGCGC GTGGAGGAGG ATCACAGCAA
 CACCGAGCTG GGCATCGTGG AGTACCAGCA CGCCTTCAAG ACCCCGGATG CAGATGCCGG TGAAGAAAGA
 GTTTAAGAAT TCCGATCATA TTCAATAACC CTTAATATAA CTTCTGATAA TGTATGCTAT ACGAAGTTAT
 TAGGTCTGAA GAGGAGTTTA CGTCCAGCCA AGCTTAGGAT CTCGACCTCG AAATTCTACC GGGTAGGGGA
 GCGCTTTTC CCAAGGCAGT CTGGAGCATG CGCTTTAGCA GCCCGCTGG GCACCTGGCG CTACACAAGT
 GGCCTCTGGC CTCGCACACA TTCCACATCC ACCGTAAGC GCCAACCGAC TCCGTTCTT GGTGGCCCTT
 TCGCGCCACC TTCTACTCCT CCCTAGTCA GGAAGTTCCC CCCC GCCCGCAGCTCCGCT CGTGCAGGAC
 GTGACAAATG GAAGTAGCAC GTCTACTAG TCTCGTGAG ATGGACAGCA CCGCTGAGCA ATGGAAGCGG
 GTAGGCCTTT GGGCAGCGG CCAATAGCAG CTTTGCTCCT TCGCTTCTG GGCTCAGAGG CTGGGAAGGG
 GTGGGTCCGG GGGCGGGCTC AGGGGCGGGC TCAGGGGCGG GCGGGGCGCC CGAAGGTCTC CCGGAGGCC
 GGCATTCTGC ACGCTTCAAA AGCGCACGTC TGCCGCGCTG TTCTCCTCTT CCTCATCTCC GGGCCTTTCG
 ACCTGCATCC ATCTAGATCT CGAGCAGCTG AAGCTTACCA TGACCGAGTA CAAGCCACG GTGCGCCTCG
 CCACCCGCGA CGACGTCCC AGGGCCGTAC GCACCCTCGC CGCCGCGTTC GCCGACTACC CCGCCACGCG
 CCACACCGTC GATCCGGACC GCCACATCGA GCGGGTCACC GAGCTGCAAG AACTCTTCT CACGCGGCTC
 GGGCTCGACA TCGGCAAGGT GTGGGTGCGG GACGACGGCG CCGCGGTGGC GGTCTGACC ACGCCGAGA
 GCGTCAAGC GGGGCGGGT TTCGCCGAGA TCGGCCCGC CATGGCCGAG TTGAGCGGTT CCCGGCTGGC
 CGCGCAGCAA CAGATGGAAG GCCTCCTGGC GCCGACCGG CCAAGGAGC CCGCGTGGT CCTGGCCACC
 GTCGGCGTCT CGCCGACCA CCAGGGCAAG GGTCTGGGCA GCGCCGTCGT GCTCCCCGA GTGGAGGCGG
 CCGAGCGCGC CGGGGTGCC GCCTTCTTGG AGACCTCCG GCCCACAACT CCCCCCTTCT ACGAGCGGCT
 CGGCTTACC GTCACCGCCG ACGTCGAGGT GCCCGAAGGA CCGCGCACCT GGTGCATGAC CCGCAAGCCC
 GGTGCCTGAC GCCCGCCCA CGACCCGACG CGCCGACCG AAAGGAGCGC ACGACCCAT GCATCGATGA
 TATCAGATCC CCGGATGCA GAAATTGAT ATCTATTA CAATAAAGAT GTCCACTAAA ATGGAAGTTT
 TTCTGTCTAT ACTTTGTTAA GAAGGTGAG AACAGAGTAC CTACATTTT AATGGAAGGA TTGGAGCTAC
 GGGGTGTTGG GTGGGTGGG ATTAGATAAA TGCTGTCTT TTAAGTGAAG CTCTTTACTA TTGCTTTATG
 ATAATGTTTC ATAGTTGGAT ATCATAATTT AAACAAGCAA AACCAAATTA AGGGCCAGCT CATTCTCTCC
 ACTCATGATC TATAGATCTA TAGATCTCTC GTGGGATCAT TGTTTTTCTC TTGATTTCCA CTTTGTGGTT
 CTAAGTACTG TGGTTTCCAA ATGTGTCAGT TTCATAGCCT GAAGAACGAG ATCAGCAGCC TCTGTTCCAC
 ATACACTTCA TTCTCAGTAT TGTTTTGCCA AGTTCTAATT CCATCAGAAG CTGGTCGAGA TCCGGAACCC
 TTAATATAAC TTCGTATAAT GTATGCTATA CGAAGTTATT AGGTCCCTCG AAGAGGTTCA CTAGGCGCGC
 CTGTTCAAGA CCCAGGGCGT GATCAAGTAC ATGGGGCCGG CAGGTGAGGG CAGCCGCGGC GCGGGGCCCC
 GGGCCGGCTC GGGGCCGCTG TGCCGAAAC CTGGGCGCAT GCAGCGGTGG GGCTGCGGCG GAGCGCCCGG
 CCCGAGAGCT GCCTCCCCG GCCACGCGTT TAGCATCTTG TTTTGGTTTC CTTCCGCACA GTGCGTGGG
 CGGCTGCACA CCGCCGAGTC CAGGCTGTCC TCGGACGCTC CGAGTTCCAG CCTCCCAAGT TGATAGGATT
 AGAGTCTTGT GTCACCGTGG GTACCTCAA ATCAATAACA GCCCGCAGCC TAGGAGCGAG GAGTGGAGGG
 CGTTTTGAGA GCTTCTTTA AGACACCTC ATTTGCCAAT AGGCTGTGTT TTGTTTTGTT TTTTTTAAAC

CGTCTCGCTT GAGAACCTGG GATGGACCAT TGCTGAAGGG CAGTATCGCC AAGTGGTCAG GACCTAGGAT
 ATGCCCTGGA GCTGAACTGC CCGGATTTCA GTTGTGGATC CCCTACTGTT TGCTGAGTGC GGTTGAGCTA
 GTTGAAAAGC TGTGCTTAGC TAGCTAGCTA GCTAGCTTTC TTCACTCTCG CCGGTTGGAT TTAGATCAGA
 AGGGATCTTG CTGCCGCCCG AAAGAGGAAG GGCTGGAAGA GGAAGGAGCT TGGCGTAATC ATGGTCATAG
 CTGTTTCCTG TGTGAAATTG TTATCCGCTC ACAATCCAC ACAACATACG AGCCGGAAGC ATAAAGTGTA
 AAGCCTGGGG TGCCTAATGA GTGAGCTAAC TCACATTAAT TGC GTTGGC TC ACTGCCCC CTTTCCAGTC
 GGGAAACCTG TCGTGCCAGC TGCATTAATG AATCGGCCAA CGCGCGGGGA GAGGCGGTTT GCGTATTGGG
 CGCTCTTCCG CTCCTCGCT CACTGACTCG CTGCGCTCGG TCGTTCGGCT GCGGCGAGCG GTATCAGCTC
 ACTCAAAGGC GGTAATACGG TTATCCACAG AATCAGGGGA TAACGCAGGA AAGAACATGT GAGCAAAGG
 CCAGAAAAG GCCAGGAACC GTAAAAAGGC CGCGTTGCTG GCGTTTTTCC ATAGGCTCCG CCCCCCTGAC
 GAGCATCACA AAAATCGACG CTCAAGTCAG AGGTGGCGAA ACCCGACAGG ACTATAAAGA TACCAGGCGT
 TTCCCCCTGG AAGCTCCCTC GTGCGCTCTC CTGTTCCGAC CCTGCCGCTT ACCGGATACC TGTCCGCCTT
 TCTCCCTTCG GGAAGCGTGG CGCTTTCTCA TAGCTCACGC TGTAGGTATC TCAGTTCGGT GTAGGTCGTT
 CGCTCCAAGC TGGGCTGTGT GCACGAACCC CCCGTTACG CCGACCGCTG CGCCTTATCC GGTAACTATC
 GTCTTGAGTC CAACCCGGTA AGACACGACT TATCGCCACT GGCAGCAGCC ACTGGTAACA GGATTAGCAG
 AGCGAGGTAT GTAGGCGGTG CTACAGAGTT CTGAAGTGG TGGCCTAACT ACGGCTACAC TAGAAGAAACA
 GTATTTGGTA TCTGCGCTCT GCTGAAGCCA GTTACCTTCG GAAAAAGAGT TGGTAGCTCT TGATCCGGCA
 AACAAACCAC CGCTGGTAGC GGTGGTTTTT TTGTTTGCAA GCAGCAGATT ACGCGCAGAA AAAAAGGATC
 TCAAGAAGAT CCTTTGATCT TTTCTACGGG GTCTGACGCT CAGTGGAAACG AAAACTCACG TTAAGGGATT
 TTGGTCATGA GATTATCAAA AAGGATCTTC ACCTAGATCC TTTTAAATTA AAAATGAAGT TTTAAATCAA
 TCTAAAGTAT ATATGAGTAA ACTTGGTCTG ACAGTTACCA ATGCTTAATC AGTGAGGCAC CTATCTCAGC
 GATCTGTCTA TTTGTTTCAT CCATAGTTGC CTGACTCCCC GTCGTGTAGA TAACTACGAT ACGGGAGGGC
 TTACCATCTG GCCCCAGTGC TGCAATGATA CCGCAGAAC CACGCTCACC GGCTCCAGAT TTATCAGCAA
 TAAACCAGCC AGCCGGAAGG GCCGAGCGCA GAAGTGGTCC TGCAACTTTA TCCGCCCTCCA TCCAGTCTAT
 TAATTGTTGC CGGGAAGCTA GAGTAAGTAG TTCGCCAGTT AATAGTTTGC GCAACGTTGT TGCCATTGCT
 ACAGGCATCG TGGTGTACAG CTCGTCGTTT GGTATGGCTT CATTACGCTC CGTTTCCCAA CGATC

GE100003, scramble sequence in pCas-Guide vector

Disclaimer:

These products are manufactured and supplied by OriGene under license from ERS. The kit is designed based on the best knowledge of CRISPR technology. The system has been functionally validated for knocking-in the cassette downstream the native promoter. The efficiency of the knock-out varies due to the nature of the biology and the complexity of the experimental process.

RefSeq:

[NM_008628](#)

UniProt ID:

[P43247](#)

Synonyms:

AI788990

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:
