

Product datasheet for **KN201612**

MGMT Human 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: MGMT
Locus ID: 4255
Components: **KN201612G1**, MGMT gRNA vector 1 in pCas-Guide CRISPR vector (GE100002), Target Sequence: GGTGCGCACCGTTTGCGACT
KN201612G2, MGMT gRNA vector 2 in pCas-Guide CRISPR vector (GE100002), Target Sequence: TCGGGACGCAAAGCGTTCTA
KN201612D, 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**

```
GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG ACGAGCGTGA CACCACGATG CCTGTAGCAA
TGGCAACAAC GTTGCACAAA CTATTAACCTG GCGAACTACT TACTCTAGCT TCCCAGCAAC AATTAATAGA
CTGGATGGAG GCGGATAAAG TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT
GATAAATCTG GAGCCGGTGA GCGTGGTTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC AGATCGCTGA
GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTACAGC CAAGTTTACT CATATATACT TTAGATTGAT
TTAAAACCTC ATTTTAAATT TAAAAGGATC TAGGTGAAGA TCCTTTTTGA TAATCTCATG ACCAAAATCC
CTTAACGTGA GTTTTCGTTC CACTGAGCGT CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC
TTTTTTCTG CGCGTAATCT GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG
GATCAAGAGC TACCAACTCT TTTTCCGAAG GTAAGTGGCT TCAGCAGAGC GCAGATACCA AATACTGTTC
TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC TCGCTCTGCT
AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG GGTGGACTC AAGACGATAG
TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT CGTGACACACA GCCCAGCTTG GAGCGAACGA
CCTACACCGA ACTGAGATAC CTACAGCGTG AGCTATGAGA AAGCGCCACG CTTCGGGAA GAGAAAGGC
GGACAGGTAT CCGGTAAGCG GCAGGGTCCG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC
TGGTATCTTT ATAGTCCTGT CCGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTGTGTA TGCTCGTCAG
GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT GCTGGCCTTT
TGCTCACATG TTCTTCTCTG CGTTATCCCC TGATTCTGTG GATAACCGTA TTACCGCCTT TGAGTGAGCT
GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA
TACGCAAACC GCCTCTCCCC GCGCGTTGGC CGATTTCATTA ATGCAGCTGG CACGACAGGT TTCCCAGCTG
GAAAGCGGGC AGTGAGCGCA ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC
TTTATGCTTC CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
ACCATGATTA CGCCAAGCTC CTTCTCTTTC CAGCCCTTCC TCTTCTACTG ACTGACTGAC TGGAAGACAC
```



[View online »](#)

ACCTCCCCCT GACAGGGTCT CTGCTGGTCT GGGGGTCCCT GACTAGGGGA GCGGCACCAG GAGGGGAGAG
 ACTCGCGCTC CGGGCTCAGC GTAGCCGCCG CGAGCAGGAC CGGGATTCTC ACTAAGCGGG CGCCGTCCTA
 CGACCCCCGC GCGCTTTCAG GACCACTCGG GCACGTGGCA GGTCGCTTGC ACGCCCGCGG ACTATCCCTG
 TGACAGGAAA AGGTACGGGC CATTGGGCAA ACTAAGGCAC AGAGCCTCAG GCGGAAGCTG GGAAGGCGCC
 GCCCGGCTTG TACCGCCGA AGGGCCATCC GGGTCAGGCG CACAGGGCAG CGGCGCTGCC GGAGGACCAG
 GGCCGGCTG CCGGCGTCCA GCGAGGATGC GCAGACTGCC TCAGGCCCGG CGCCGCCCGA CAGGGCATGC
 GCCGACCCGG TCGGGCGGGA ACACCCCGCC CCTCCCGGGC TCCGCCCCAG CTCCGCCCCC GCGCGCCCGG
 GCCCGCCCCC CGCGCGCTCT CTTGCTTTTC TCAGGTCTCT GGCTCCGCCG CGCTCTAGAC CCCGCCCCAC
 GCCGCGATCC CCGTGCCCTT CCGCCCGGCC CCCGCGCCCC GGATACTAGC ATGGAGAGCG ACGAGAGCGG
 CCTGCCCGCC ATGGAGATCG AGTGCCGCAT CACCGGCACC CTGAACGGCG TGGAGTTCGA GCTGGTGGGC
 GCGGAGAGG GCACCCCGCA GCAGGGCCGC ATGACCAACA AGATGAAGAG CACCAAAGGC GCCCTGACCT
 TCAGCCCTA CTTGCTGAGC CACGTGATGG GCTACGGCTT CTACCACTTC GGCACCTACC CCAGCGGCTA
 CGAGAACCCC TTCCTGCACG CCATCAACAA CGGCGGCTAC ACCAACACCC GCATCGAGAA GTACGAGGAC
 GGGCGGCTG TGACGTGAG CTTGAGCTAC CGCTACGAGG CCGGCCGCGT GATCGGCGAC TTCAAGGTGA
 TGGGACCCGG CTTCCCGGAG GACAGCGTGA TCTTACCAGA CAAGATCATC CGCAGCAACG CCACCGTGGG
 GCACCTGCAC CCCATGGGCG ATAACGATCT GGATGGCAGC TTCACCCGCA CCTTCAGCCT GCGCGACGGC
 GGTACTACA GCTCCGTGGT GGACAGCCAC ATGCACTTCA AGAGCGCCAT CCACCCAGC ATCCTGCAGA
 ACGGGGGCCC CATGTTCCGC TTCGCGCGG TGGAGGAGGA TCACAGCAAC ACCGAGCTGG GCATCGTGGG
 GTACCAGCAC GCCTTCAAGA CCCCGGATGC AGATGCCGGT GAAGAAAGAG TTTAAGAATT CCGATCATAT
 TCAATAACCC TTAATATAAC TTCGTATAAT GTATGCTATA CGAAGTTATT AGGTCTGAAG AGGAGTTTAC
 GTCCAGCAA GCTTAGGATC TCGACCTCGA AATTCTACCG GGTAGGGGAG GCGCTTTTCC CAAGGCAGTC
 TGGAGCATGC GCTTAGCAG CCCCGCTGGG CACTTGGGCG TACACAAGTG GCCTCTGGC TCGCACACAT
 TCCACATCCA CCGTAGGCG CCAACCGACT CCGTTCTTTG GTGGCCCTT CGCGCCACT TCTACTCTC
 CCCTAGTCAG GAAGTTCGCC CCCGCCCGC AGCTCGGTC GTGCAGGACG TGACAAATGG AAGTAGCACG
 TCTCACTAGT CTCGTGCAGA TGGACAGCAC CGCTGAGCAA TGGAAAGCGG TAGGCCTTTG GGGCAGCGG
 CAATAGCAGC TTTGCTCCTT CGCTTTCTGG GCTCAGAGG TGGGAAGGGG TGGTCCGGG GCGGGCTCA
 GGGGCGGGCT CAGGGGCGGG GCGGGCGCCC GAAGTCTCT CGGAGGCCCG GCATTCTGCA CGCTTCAAAA
 GCGCAGTCT GCCGCGCTGT TCTCCTCTC CTCATCTCCG GGCTTTTGA CCTGCATCCA TCTAGATCTC
 GAGCAGTGA AGCTTACCAT GACCGAGTAC AAGCCCACGG TGGCCTCGC CACCCGCGAC GACGTCCCA
 GGGCCGTACG CACCCTCGCC GCCGCTTCC CCGACTACC CGCCACGCG CACACCGTCG ATCCGGACCG
 CCACATCGAG CGGGTCACCG AGCTGCAAGA ACTCTTCTC ACGCCGCTCG GGCTCGACAT CGGCAAGGTG
 TGGTTCGCGG ACGACGGCGC CGCGGTGGCG GTCTGGACCA CGCCGGAGAG CGTCGAAGCG GGGGCGGTGT
 TCGCCGAGAT CGGCCCGCGC ATGGCCGAGT TGAGCGGTTT CCGGCTGGCC GCGCAGCAAC AGATGGAAGG
 CCTCTGGCG CGCACCCGGC CCAAGGAGCC CGCGTGGTTC CTGGCCACC GCGGCGTCTC GCCCGACCAC
 CAGGGCAAGG GTCTGGGCGG CGCCGCTGTG CTCCCGGAG TGGAGGCGGC CGAGCGCGCC GGGGTGCCCG
 CCTTCTGGA GACCTCCGCG CCCACAACC TCCCCTTCTA CGAGCGGCTC GGCTTACCAG TCACCGCCGA
 CGTCGAGGTG CCCGAAGGAC CGCGCACCTG GTGCATGACC CGCAAGCCCG GTGCCTGACG CCCGCCCCAC
 GACCCGACG GCCCGACCGA AAGGAGCGCA CGACCCATG CATCGATGAT ATCAGATCCC CGGGATGCAG
 AAATTGATGA TCTATTAAC AATAAAGATG TCCACTAAA TGGAAAGTTT TCCTGTCATA CTTTGTAAAG
 AAGGGTGAGA ACAGAGTACC TACATTTTGA ATGGAAGGAT TGGAGTACG GGGGTGGGG TGGGGTGGGA
 TTAGATAAAT GCCTGCTCTT TACTGAAGGC TCTTACTAT TGCTTTATGA TAATGTTTCA TAGTTGATA
 TCATAATTTA AACAAAGCAA ACCAAATTAA GGGCCAGCTC ATTCCTCCA CTCATGATCT ATAGATCTAT
 AGATCTCTCG TGGATCATT GTTTTTCTCT TGATTCCAC TTTGTGGTTC TAAGTACTGT GGTTCACAAA
 TGTGTCAGTT TCATAGCCTG AAGAACGAGA TCAGCAGCCT CTGTTCCACA TACACTTCAT TCTCAGTATT
 GTTTTGCCAA GTTCTAATTC CATCAGAAGC TGGTCGAGAT CCGGAACCCT TAATATAACT TCGTATAATG
 TATGCTATAC GAAGTTATTA GGTCCCTCGA AGAGTTTAC TAGGCGCGCC **TCGCTCCCGG AAGAGTGGG**
AGCTCTCCCT CGGGACGGTG GCAGCCTCGA GTGGTCTGCG AGGCGCCCTC ACTTCGCGGT CGGGTGTGGG
GCCGCCCTGA CCCCACCCA TCTCGGGCGA GCTCCAGGTG CGCCCAAGT GCCTCCAGG TGTTGCCCG
CCTTCCCGG GGCTGGGGT TCTGGACTA GGCTGCGCTG CAGTACTGT GGACTGGCT GTGGCGGGG
TCGTGGCAGC CCCTGCCTA CCTCTAGGTG CCAGCCCGG GCCCGGGCC CGGGTCTTC CTACCTTCC
ATGCTGCCAG CTTTCCCTC GCCAGCTGCT CCAGGAAGT TCCAGAAGC CCTGCGCGG CCTTGGCTTG
CAGCAACCCT TTAGCACT TAGGCAGAGT CCCATATTC CTTCTGCTG GAGGCCAAGT TCTAGGGCC

```

TTCTGGTTAC TATGGCTGGT GTTTGTGTAC ATCATACCCT AACTGTATTC ATCAACACTT AGAGTAAGCA
AGGCTCGCTG GAGAGCCACA CACACTGGGC ACCGTAATGT CGGTTATAAC ACCGCAGAGG AGTTCTGAAC
TATGTATTTT GCACTCCTGG ACGACAGTCT TCACTGACTG ACTGACTGGA AAGTCCTCTC CACTGACTGT
AGCCTCCAAT TCACTGGCCG TCGTTTTACA ACGTCGTGAC TGGGAAAACC CTGGCGTTAC CCAACTTAAT
CGCCTTGACG CACATCCCCC TTTCGCCAGC TGGCGTAATA GCGAAGAGGC CCGCACCGAT CGCCCTTCCC
AACAGTTGCG CAGCCTGAAT GGCGAATGGC GCCTGATGCG GTATTTTCTC CTTACGCATC TGTGCGGTAT
TTCACACCGC ATACGTCAA GCAACCATAG TACGCGCCCT GTAGCGGCGC ATTAAGCGCG GCGGGTGTGG
TGGTTACGCG CAGCGTGACC GCTACACTTG CCAGCGCCCT AGCGCCCGCT CCTTTCGCTT TCTTCCCTTC
CTTTCTCGCC ACGTTCGCCG GCTTTCGCCG TCAAGCTCTA AATCGGGGGC TCCCTTTAGG GTTCCGATTT
AGTGCTTTAC GGCACCTCGA CCCCAGAAA CTTGATTTGG GTGATGGTTC ACGTAGTGGG CCATCGCCCT
GATAGACGGT TTTTCGCCCT TTGACGTTGG AGTCCACGTT CTTAATAGT GGACTCTTGT TCCAAACTGG
AACAACTC AACCCATCT CGGGCTATTC TTTTGATTTA TAAGGGATTT TGCCGATTTT GGCCTATTGG
TTAAAAATG AGCTGATTTA ACAAAAAAT AACCGAATT TTAACAAAAT ATTAACGTTT ACAATTTTAT
GGTGCCTCT CAGTACAATC TGCTCTGATG CCGCATAGTT AAGCCAGCCC CGACACCCGC CAACACCCGC
TGACGCGCCC TGACGGGCTT GTCTGCTCCC GGCATCCGCT TACAGACAAG CTGTGACCGT CAACGGGAGC
TGATGTGTC AGAGGTTTTT ACCGTCATCA CCGAAACGCG CGACCCGAAA GGGCCTCGTG ATACGCCTAT
TTTTATAGGT TAATGTCATG ATAATAATGG TTTCTTAGAC GTCAGGTGGC ACTTTTCGGG GAAATGTGCG
CGGAACCCCT ATTTGTTTAT TTTTCTAAT ACATTCAAAT ATGTATCCGC TCATGAGACA ATAACCCTGA
TAAATGCTTC AATAATATTG AAAAAGGAAG AGTATGAGTA TTCAACATTT CCGTGTGCCC CTTATTCCTT
TTTTTGCGGC ATTTTGCCTT CCTGTTTTTG CTCACCCAGA AACGCTGGTG AAAGTAAAG ATGCTGAAGA
TCAGTTGGGT GCACGAGTGG GTTACATCGA ACTGGATCTC AACAGCGGTA AGATCCTTGA GAGTTTTCGC
CCGAAGAAC GTTTTCCAAT GATGAGCACT TTTAAAGTTC TGCTATGTGG CGCGGTATTA TCCCGTATTG
ACGCCGGGCA AGAGCAACTG GGTGCGCCGA TACACTATTC TCAGAAATGAC TTGGTTGAGT ACTCACCAGT
CACAGAAAAG CATCTTACGG ATGGCATGAC AGTAAGAGAA TTATGCAGTG CTGCCATAAC CATGAGTGAT
AACACTGCGG CCAACTTACT TCTGACAACG ATCGGAGGAC CGAAGGAGCT AACCGCTTTT TTGCACAACA
TGGGGGATCA TGTAACCTCG CTT

```

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_002412](#)

UniProt ID:

[P16455](#)

Synonyms:

methylguanine-DNA methyltransferase; O-6-methylguanine-DNA methyltransferase; O6-methylguanine-DNA methyltransferase; OTTHUMP00000020741

Summary:

Alkylating agents are potent carcinogens that can result in cell death, mutation and cancer. The protein encoded by this gene is a DNA repair protein that is involved in cellular defense against mutagenesis and toxicity from alkylating agents. The protein catalyzes transfer of methyl groups from O(6)-alkylguanine and other methylated moieties of the DNA to its own molecule, which repairs the toxic lesions. Methylation of the genes promoter has been associated with several cancer types, including colorectal cancer, lung cancer, lymphoma and glioblastoma. [provided by RefSeq, Sep 2015]

Product images:

