

Product datasheet for **KN211784BN**

p16INK4A (CDKN2A) Human Gene Knockout Kit (CRISPR)

Product data:

Product Type:	Knockout Kits (CRISPR)
Format:	2 gRNA vectors, 1 mBFP-Neo donor, 1 scramble control
Donor DNA:	mBFP-Neo
Symbol:	p16INK4A
Locus ID:	1029
Components:	<p>KN211784G1, p16INK4A gRNA vector 1 in pCas-Guide CRISPR vector (GE100002), Target Sequence: GCAGGTTCTTGGTGACCCTC</p> <p>KN211784G2, p16INK4A gRNA vector 2 in pCas-Guide CRISPR vector (GE100002), Target Sequence: ACGAAAACCCTCACTCGCGG</p> <p>KN211784BND, donor DNA containing left and right homologous arms and mBFP-Neo functional cassette.</p>

Homologous arm and mBFP-Neo sequences:

pUC vector backbone in gray; Left arm sequence in blue; mBFP-Neo in green; Right arm in violet

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TTTTAAATAA TCTAGTTTGA AGAATGGAAG ACTTTCGACG AGGGGAGCCA GGAATAAAAT AAGGGGAATA
GGGGAGCGGG GACGCGAGCA GCACCAGAAT CCGCGGGAGC GCGGCTGTTC CTGGTAGGGC CGTGTCAAGT
GACGGATGTA GCTAGGGGGC GAGCTGCCTG GAGTTGCGTT CCAGGCGTCC GGCCCTGGG CCGTCACCGC
GGGGCGCCCG CGCTGAGGT GGAAGATGG TGGTGGGGT GGGGGCGCAC ACAGGGCGGG AAAGTGGCGG
TAGCGGGGAG GGAGAGGAAC GCGGGCCCTG AGCCGCCCGC GCGCGCGCCT CCCTACGGG GCCTCCGGCA
GCCCTTCCCG CGTGCGCAGG GCTCAGAGCC GTTCCGAGAT CTTGGAGGTC CGGGTGGGAG TGGGGGTGGG
GTGGGGTGG GGGTGAAGT GGGGGGCGGG CGCGCTCAGG GAAGGCGGGT GCGCGCCTGC GGGGCGGAGA
TGGGCAGGGG GCGGTGCGTG GGTCCCAGTC TGCAGTTAAG GGGGCAGGAG TGGCGTGTCT CACCTCTGGT
GCCAAAGGGC GGCGCAGCGG CTGCCAGCT CGGCCCTGGA CGGGGGAGTG GGCAGCGCCA GGGGCGCCCG
CCGCTGTGGC CCTCGTGTG ATGCTACTGA GGAGCCAGCG TCTAGGGCAG CAGCCGCTTC CTAGAAGACC
AGTAGGAAA GGCCCTCGAA AAGTCCGGG CGCATTGCG ACTTGTTTTT TTTGGTGTGA TTTTCGTAAC
AGATAATTCG TCTTAGCCC AGGCTAGGAG GAGGAGGAGA TAACCGCCGG TGGAGGCTTC CCCATTGCGG
TTACAACGAC TTAGACATGT GGTTCCTGCA GTACCATTGA ACCTGGACCT CCCTTCACAC AGCCCCCTCA
TCGTGGGAAA CTGAGGCGAA CAGAGCTTCT AAACCCACCT CAGAAGTCAG TGAGTCCGA ATATCCTGGG
TGGGAATGAC TAAGACACAC ACACACACAC ACACACACAC ACACACACAC ACACACACAC AGTAGGAAAAG
GTGATTTTCA AGCACACTTT CTTTCTCCTT GGGGAGAATT ATTGCTAACC ATCTAAGTTT TCTGGAGGCG
GCCTTTTTTC TCCCAGCCT CCCGGCGGGG TCACCCTCTC CCACCTTCCA GGAGAGTGGA GGACCCGTGA
GATACGGGGC

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GE100003, scramble sequence in pCas-Guide vector



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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_000077](#), [NM_001195132](#), [NM_058195](#), [NM_058196](#), [NM_058197](#), [NM_001363763](#)

UniProt ID: [P42771](#)

Synonyms: ARF; CDK4I; CDKN2; CMM2; INK4; INK4A; MLM; MTS-1; MTS1; P14; P14ARF; P16; P16-INK4A; P16INK4

Summary: This gene generates several transcript variants which differ in their first exons. At least three alternatively spliced variants encoding distinct proteins have been reported, two of which encode structurally related isoforms known to function as inhibitors of CDK4 kinase. The remaining transcript includes an alternate first exon located 20 Kb upstream of the remainder of the gene; this transcript contains an alternate open reading frame (ARF) that specifies a protein which is structurally unrelated to the products of the other variants. This ARF product functions as a stabilizer of the tumor suppressor protein p53 as it can interact with, and sequester, the E3 ubiquitin-protein ligase MDM2, a protein responsible for the degradation of p53. In spite of the structural and functional differences, the CDK inhibitor isoforms and the ARF product encoded by this gene, through the regulatory roles of CDK4 and p53 in cell cycle G1 progression, share a common functionality in cell cycle G1 control. This gene is frequently mutated or deleted in a wide variety of tumors, and is known to be an important tumor suppressor gene. [provided by RefSeq, Sep 2012]

Product images:

