

Product datasheet for **KN211784**

p16INK4A (CDKN2A) 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:	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>KN211784D, donor DNA containing left and right homologous arms and GFP-puro functional cassette.</p>

Homologous arm and GFP-puro sequences:

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

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TAGTTTGAAG AATGGAAGAC TTTTCGACGAG GGGAGCCAGG AATAAAATAA GGGGAATAGG GGAGCGGGGA
CGCGAGCAGC ACCAGAATCC GCGGGAGCGC GGCTGTTCTT GGTAGGGCCG TGTCAGGTGA CGGATGTAGC
TAGGGGGCGA GCTGCCTGGA GTTGCCTTCC AGGCGTCCGG CCCCTGGGCC GTCACCCGGG GGCGCCCGCG
CTGAGGGTGG GAAGATGGTG GTGGGGGTGG GGGCGCACAC AGGGCGGGAA AGTGGCGGTA GCGGGAGGG
AGAGGAACGC GGGCCCTGAG CCGCCCGCGC GCGCGCCTCC CTACGGGCGC CTCCGGCAGC CCTTCCCGCG
TGCAGAGGGC TCAGAGCCGT TCCGAGATCT TGGAGGTCCG GGTGGGAGTG GGGGTGGGGT GGGGGTGGGG
GTGAAGGTGG GGGCGGGCG CGCTCAGGGA AGGCGGGTGC GCGCCTGCGG GCGGAGATG GGCAGGGGGC
GGTGCCTGGG TCCAGTCTG CAGTTAAGGG GGCAGGAGTG GCGCTGCTCA CCTCTGGTGC CAAAGGGCGG
CGCAGCGGCT GCCGAGCTCG GCCCTGGAGG CGGCGAGAAC GTTCACATCC CGCGGCTCAC GGGGGAGTGG
GCAGCGCCAG GGGCGCCCGC CGCTGTGGCC CTCGTGCTGA TGCTACTGAG GAGCCAGCGT CTAGGGCAGC
AGCCGCTTCC TAGAAGACCA GGTAGGAAAG GCCCTCGAAA AGTCCGGGGC GCATTCGGCA CTTGTTTTGT
TTGGTGTGAT TTCGTAACA GATAATTCGT CTCTAGCCCA GGCTAGGAGG AGGAGGAGAT AACCCCGGCT
GGAGGCTTCC CCATTCGGGT TACAACGACT TAGACATGTG GTTCTCGCAG TACCATTGAA CCTGGACCTC
CCTTCACACA GCCCCTCAAT CGTGGGAAAC TGAGGCGAAC AGAGCTTCTA AACCCACCTC AGAAGTCACT
GAGTCCCGAA TATCCTGGGT GGGAAATGACT AAGACACACA CACACACACA CACACACACA CACACACACA
CACACACACA GTAGGAAAGG TGTATTCAA GCACACTTTC TTTCTCCTTG GGGAGAATTA TTGCTAACCA
TCTAAGTTTT CTGGAGGCGG CCTTTTTTCT CCCAGCCTC CCGGCGGGGT CACCCTCTCC CACCTTCCAG
GAGAGTGGAG

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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:

