

Product datasheet for **KN211318**

CD28 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:	CD28
Locus ID:	940
Components:	<p>KN211318G1, CD28 gRNA vector 1 in pCas-Guide CRISPR vector (GE100002), Target Sequence: TACCTGTTACTTGAATTGAA</p> <p>KN211318G2, CD28 gRNA vector 2 in pCas-Guide CRISPR vector (GE100002), Target Sequence: ATTTTTTGAGGTCTTCCAAT</p> <p>KN211318D, 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**

```

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 GGGGCGAAAA CTCTCAAGGA TCTTACCGET 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 TTCCCGGAAA 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
AGCGGTACAG 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 CGTTGTAATA
CGACGGCCAG TGAATTGGAG GCTACAGTCA GTGGAGAGGA CTTTCACAGG CTGTCGCCGT GCTCATTTGA

```



[View online »](#)

TAACTGCCCG TTATTCATGC GACACTCAAG CGATTCTCCT GCCTTAGCCT CCCTAGTAGC TGGGATTACA
 GGTACCCACC ATGATGCCTG GCTAATTTTT TGTATTTTCA ATGGAGACGG GGTTTCACCA TGTTGGCCAG
 GCTCGTCTTG ACCTCCTGGC CTCAAATGAT CCACCCACTT TGGCCTCCCA AATTGCTGGC ATTACAGGCG
 TGAGCCACTG CACCCGGCCT GTTCCTTCTT AAGAACACTT TGTCTCCCCT TTAATCTCTG CTGGATTTCA
 AGCACCCCTT TTACACAAC TTTGATATCC ATCAATAAAG AATAATTCCC ATAAGCCCAT CATGTAGTGA
 CCGACTATTT TTCAGTGACA AAAAAAAGT CTTTAAAAAT AGAAGTAAAA GTCTAAAGTC ATCAAAAACAA
 CGTTATATCC TGTGTGAAAT GCTGCAGTCA GGATGCCTTG TGGTTTGTAG GCCTTGATCA TGTGCCCTAA
 GGGGATGGTG GCGGTGGTGG TGGCCGTGGA TGACGGAGAC TCTCAGGCCT TGGCAGGTGC GTCTTTCACT
 TCCCTCACA CTTCGGGTTC CTCGGGGAGG AGGGGCTGGA ACCCTAGCCC ATCGTCAGGA CAAAGACTAG
 CATGGAGAGC GACGAGAGCG GCCTGCCCGC CATGGAGATC GAGTGCCGCA TCACCCGGCAC CCTGAACGGC
 GTGGAGTTCG AGCTGGTGGG CGGCGGAGAG GGCACCCCGG AGCAGGGCCG CATGACCAAC AAGATGAAGA
 GCACCAAAGG CGCCCTGACC TTCAGCCCTT ACCTGCTGAG CCACGTGATG GGCTACGGCT TCTACCACTT
 CGGCACCTAC CCCAGCGGCT ACGAGAACCC CTTCTGCAC GCCATCAACA ACGGCGGCTA CACCAACACC
 CGCATCGAGA AGTACGAGGA CGGCGGCGTG CTGCACGTGA GCTTCAGCTA CCGCTACGAG GCCGGCCGCG
 TGATCGGCGA CTTCAAGGTG ATGGGCACCG GCTTCCCGA GGACAGCGTG ATCTTACCAG ACAAGATCAT
 CCGCAGCAAC GCCACCGTGG AGCACCTGCA CCCCATGGGC GATAACGATC TGGATGGCAG CTTACCCCGC
 ACCTTCAGCC TGC GCGACGG CGGCTACTAC AGCTCCGTGG TGGACAGCCA CATGCACCTT AAGAGCGCCA
 TCCACCCAG CATCCTGCAG AACGGGGGCC CCATGTTTCG CTTCCGGCCG GTGGAGGAGG ATCACAGCAA
 CACCGAGCTG GGCATCGTGG AGTACCAGCA CGCCTTCAAG ACCCCGGATG CAGATGCCGG TGAAGAAAGA
 GTTTAAGAAT TCCGATCATA TTCAATAACC CTTAATATAA CTTCTGTATA TGTATGTAT ACGAAGTTAT
 TAGGTCTGAA GAGGAGTTTA CGTCCAGCCA AGCTTAGGAT CTCGACCTCG AAATTCTACC GGGTAGGGGA
 GGCCTTTTC CCAAGGCAGT CTGGAGCATG CGCTTTAGCA GCCCGCTGG GCACCTGGCG CTACACAAGT
 GGCCTCTGGC CTCGCACACA TTCCACATCC ACCGGTAGGC GCCAACCGAC TCCGTTCTTT GTTGGCCCTT
 TCGCGCCACC TTCTACTCCT CCCCTAGTCA GGAAGTTCCC CCCC GCCCG CAGCTCGCTT CGTGCAGGAC
 GTGACAAATG GAAGTAGCAC GTCTACTAG TCTCGTGAG ATGGACAGCA CCGCTGAGCA ATGGAAGCGG
 GTAGGCCTTT GGGGAGCGG CCAATAGCAG CTTTGTCTCT TCGCTTTCTG GGCTCAGAGG CTGGGAAGGG
 GTGGGTCCGG GGGCGGGCTC AGGGGCGGGC TCAGGGGCGG GCGGGGCGCC CGAAGGTCTT CCGGAGGCC
 GGCATTCTGC ACGCTTCAA AGCGCACGTC TGCCGCGCTG TTCTCCTCTT CCTCATCTCC GGGCCTTTCTG
 ACCTGCATCC ATCTAGATCT CGAGCAGCTG AAGCTTACCA TGACCGAGTA CAAGCCACG GTGCGCCTCG
 CCACCCGCGA CGACGTCCC AGGGCCGTAC GCACCCTCG CGCCGCGTTC GCCGACTACC CCGCCACGCG
 CCACACCGTC GATCCGGACC GCCACATCGA GCGGGTACC GAGCTGCAAG AACTCTTCT CACGCGCGTC
 GGGCTCGACA TCGCAAGGT GTGGGTGCGG GACGACGGCG CCGCGGTGGC GGTCTGGACC ACGCCGAGA
 GCGTCAAGC GGGGCGGGT TCGCCGAGA TCGGCCGCG 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 ACGACCCCAT GCATCGATGA
 TATCAGATCC CCGGATGCA GAAATTGAT ATCTATTA CAATAAAGAT GTCCACTAAA ATGGAAGTTT
 TTCTGTCTAT ACTTTGTTAA GAAGGTGAG AACAGAGTAC CTACATTTT AATGGAAGGA TTGGAGCTAC
 GGGGTGGGG GTGGGTGGG ATTAGATAAA TGCTGTCTT TTAAGTGAAG CTCTTTACTA TTGCTTTATG
 ATAATGTTT ATAGTTGGAT ATCATAATTT AAACAAGCAA AACCAAATTA AGGGCCAGCT CATTCTCTCC
 ACTCATGATC TATAGATCTA TAGATCTCTC GTGGGATCAT TGTTTTTCTT TTGATTTCCA CTTTGTGGTT
 CTAAGTACTG TGGTTTCAA ATGTGTGAGT TTCATAGCCT GAAGAACGAG ATCAGCAGCC TCTGTTCCAC
 ATACACTTCA TTCTCAGTAT TGTTTTGCCA AGTTCTAATT CCATCAGAAG CTGGTCGAGA TCCGGAACCC
 TTAATATAAC TTCGTATAAT GTATGCTATA CGAAGTTATT AGGTCCCTCG AAGAGGTTCA CTAGGCGCGC
 CAAATTTCTA ACAATGTGTG AAATTTGAAC ATTTGAAGTG TAGTTTTGCT GTAATAGGGC AATGTGTTAT
 TTTGAAAATC ATTGATTCTC AGACTACAAT ATAGTATCTT AACAAAAGTC CTTGGAAT AAATTTTCTA
 AGCTATTAGT TTCTCTAGCT ATTAGTTGAT AGTGCCCAA GAATTTATTA TTATTATTAT TATTTTAAAT
 TGAGATGGGG TTTCACTATG TTGCCAGGC TGGTCTCAA CTTCTGAGCT CAAGCAATCC ACCTGCCTCT
 GCCTCCAAA GTGCTAGGGT TACAGGCATG AGCTACCATG CCCGGCCAAT AATTTTAAAT TTATGTATCG
 TTTCTTTCTT TCTTTCTTT TTTTTTAAAT TTAAGAAAGC TGCTGTAAGT AGATTGGCTC TGAAGCTCT

GAATTTAGGT TGCCTATGTT CCTAACACAG GTCCAATTCT CACTAGGTAA GCTTAGGCTT AGCTATTATT
 TAAACTCTCC AACCTCAGT TTCCTTAACT GTAAAGTGGG AATAATAATA AACCTCACCT CAAGGTCATT
 GTGAGGTAAT ATGAAATAAT CCATGCGAAG GGCTTAGCTC ATCACTCTCG CGGTTGGACT TTAGATCAGA
 AGGGATCTTG CTGCCGCCG AAAGAGGAAG GGCTGGAAGA GGAAGGAGCT TGGCGTAATC ATGGTCATAG
 CTGTTTCTCG TGTGAAATTG TTATCCGCTC ACAATCCAC ACAACATACG AGCCGGAAGC ATAAAGTGTA
 AAGCCTGGGG TGCCTAATGA GTGAGCTAAC TCACATTAAT TGCCTTGGC TCACTGCCCC CTTTCCAGTC
 GGGAAACCTG TCGTGCCAGC TGCATTAATG AATCGGCCAA CGCGCGGGGA GAGCGGTTT GCGTATTGGG
 CGCTCTTCCG CTCCTCGCT CACTGACTCG CTGCGCTCGG TCGTTCGGCT GCGGCGAGCG GTATCAGCTC
 ACTCAAAGGC GGTAATACGG TTATCCACAG AATCAGGGGA TAACGCAGGA AAGAACATGT GAGCAAAGG
 CCAGCAAAG GCCAGGAACC GTAAAAAGGC CGCGTTGCTG GCGTTTTTCC ATAGGCTCCG CCCCCCTGAC
 GAGCATCACA AAAATCGACG CTCAAGTCAG AGGTGGCGAA ACCCGACAGG ACTATAAAGA TACCAGGCGT
 TTCCCCTGG AAGCTCCCTC GTGCGCTCTC CTGTTCCGAC CCTGCCGCTT ACCGGATACC TGTCCGCCTT
 TCTCCCTCG GGAAGCGTGG CGCTTTCTCA TAGCTCACGC TGTAGGTATC TCAGTTCGGT GTAGGTCGTT
 CGTCCAAGC TGGGCTGTGT GCACGAACCC CCCGTTACG CCGACCGCTG CGCCTTATCC GGTAACTATC
 GTCTTGAGTC CAACCCGTA AGACACGACT TATCGCCACT GGCAGCAGCC ACTGGTAACA GGATTAGCAG
 AGCGAGGTAT GTAGCGGTG CTACAGAGTT CTGAAGTGG TGGCCTAACT ACGGCTACAC TAGAAGAACA
 GTATTTGGTA TCTGCGCTCT GCTGAAGCCA GTTACCTTCG GAAAAAGAGT TGGTAGCTCT TGATCCGGCA
 AACAAACCAC CGCTGGTAGC GGTGGTTTTT TTGTTTGCAA GCAGCAGATT ACGCGCAGAA AAAAAGGATC
 TCAAGAAGAT CCTTTGATCT TTTCTACGGG GTCTGACGCT CAGTGGAAAC AAAACTCACG TTAAGGGATT
 TTGGTCATGA GATTATCAA AAGGATCTTC ACCTAGATCC TTTTAAATTA AAAATGAAGT TTTAAATCAA
 TCTAAAGTAT ATATGAGTAA ACTTGGTCTG ACAGTTACCA ATGCTTAATC AGTGAGGCAC CTATCTCAGC
 GATCTGTCTA TTTGTTTCAT CCATAGTTGC CTGACTCCCC GTCGTGTAGA TAACTACGAT ACGGGAGGGC
 TTACCACCTG GCCCCAGTGC TGCAATGATA CCGCGGAAC CACGCTCAC GGCTCCAGAT TTATCAGCAA
 TAAACCAGCC AGCCGGAAGG GCCGAGCGCA GAAGTGGTCC TGCAACTTTA TCCGCCTCCA TCCAGTCTAT
 TAATTGTTGC CGGGAAGCTA GAGTAAGTAG TTCGCCAGTT AATAGTTTGC GCAACGTTGT TGCCATTGCT
 ACAGGCATCG TGGTGTACG CTCGTCGTTT GGTATGGCTT CATTACGCTC CGTTCCCAA 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_001243077](#), [NM_001243078](#), [NM_006139](#)

UniProt ID:

[P10747](#)

Synonyms:

Tp44

Summary:

The protein encoded by this gene is essential for T-cell proliferation and survival, cytokine production, and T-helper type-2 development. Several alternatively spliced transcript variants encoding different isoforms have been found for this gene.[provided by RefSeq, Jul 2011]

