

Product datasheet for **KN515814**

Six4 Mouse Gene Knockout Kit (CRISPR)

Product data:

Product Type:	Knockout Kits (CRISPR)
Format:	2 gRNA vectors, 1 linear donor
Donor DNA:	EF1a-GFP-P2A-Puro
Symbol:	Six4
Locus ID:	20474



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Components:
KN515814G1, Six4 gRNA vector 1 in pCas-Guide CRISPR vector (GE100002)

KN515814G2, Six4 gRNA vector 2 in pCas-Guide CRISPR vector (GE100002)

KN515814D, Linear donor DNA containing LoxP-EF1a-tGFP-P2A-Puro-LoxP:

The sequence below is cassette sequence only. The linear donor DNA also contains proprietary target sequence.

LoxP-EF1a-tGFP-P2A-Puro-LoxP (2739 bp)

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ATAACTTCGT ATAATGTATG CTATACGAAG TTATCGTGAG GCTCCGGTGC CCGTCAGTGG GCAGAGCGCA
CATCGCCAC AGTCCCGAG AAGTTGGGG GAGGGGTCGG CAATTGAACC GGTGCCTAGA GAAGGTGGCG
CGGGTAAC TGGAAAGTG ATGTCGTGTA CTGGCTCCG CTTTTCCCG AGGGTGGGG AGAACCGTAT
ATAAGTCAG TAGTCGCCG GAACGTTCT TTTCCGAAC GGTTCGCCG CAGAACACAG GTAAGTGCCG
TGTGTGGTC CCGCGGCCCT GGCCTCTTA CGGGTTATG CCCTTGCGTG CCTTGAATTA CTTCCACCTG
GCTGCAGTAC GTGATTCTG ATCCCGAGCT TCGGGTTGGA AGTGGGTGG AGAGTTCGAG GCCTTGCGCT
TAAGGAGCCC CTTCGCCTG TGCTTGAGT GAGGCCTGG CTGGGCGTG GGGCCCGCG GTGCGAATCT
GGTGGCACCT TCGCGCCTG CTCGCTGCT TCGATAAGT TCTAGCCATT TAAAATTTT GATGACCTGC
TGCAGCGCT TTTTCTGGC AAGATAGTCT TGTAATGCG GGCCAAGATC TGCACACTGG TATTTTCGTT
TTTGGGGCCG CGGGCGGCGA CGGGGCCCGT GCGTCCCAGC GCACATGTTC GGCAGGCGG GGCCTGCGAG
CGCGGCCACC GAGAATCGGA CGGGGTAGT CTCAAGCTGG CCGGCCTGCT CTGGTGCCTG GCCTCGCGCC
GCCGTGTATC GCCCGCCCT GGGCGCAAG GCTGGCCCG TCGGCACCAG TTGCGTGAGC GGAAAGATGG
CCGTTCCCG GCCCTGTGC AGGGAGCTCA AAATGGAGGA CGCGCGCTC GGGAGAGCGG GCGGGTGAAGT
CACCCACACA AAGGAAAAGG GCCTTCCGT CCTCAGCCG CGCTTCATGT GACTCCACGG AGTACCGGGC
GCCGTCAGG CACCTCGATT AGTTCTGAG CTTTGGAGT ACGTCGTCT TAGTTGGGG GGAGGGGTTT
TATGCGATGG AGTTTCCCA CACTGAGTGG GTGAGACTG AAGTTAGGCC AGCTTGGCAG TTGATGTAAT
TCTCCTTGG AATTGCCCT TTTGAGTTG GATCTTGGT CATTCTCAAG CCTCAGACAG TGGTTCAAAG
TTTTTTCTT CCATTTCAAG TGTCGTGAAT GGAGAGCGAC GAGAGCGGCC TGCCCGCCAT GGAGATCGAG
TGCCGCATCA CCGGCACCCT GAACGGCGTG GAGTTCGAGC TGGTGGGCGG CGGAGAGGGC ACCCCGAGC
AGGGCCGCAT GACCAACAAG ATGAAGAGCA CCAAAGGCGC CCTGACCTTC AGCCCTACC TGCTGAGCCA
CGTGATGGC TACGGCTTCT ACCACTTCG CACCTACCC AGCGGCTACG AGAACCCCTT CCTGCACGCC
ATCAACAACG GCGGCTACAC CAACACCCG ATCGAGAAGT ACGAGGACGG CGGCGTGCTG CACGTGAGCT
TCAGCTACG CTACGAGGC GGCCGCGTGA TCGGCGACTT CAAGGTGATG GGCACCGGCT TCCCGGAGGA
CAGCGTGATC TTCACCGACA AGATCATCCG CAGCAACGCC ACCGTGGAGC ACCTGCACCC CATGGCGGAT
AACGATCTGG ATGGCAGCTT CACCCGACC TTCAGCCTGC GCGACGGCGG CTACTACAGC TCCGTGGTGG
ACAGCCACAT GCACTTCAAG AGCGCCATCC ACCCCAGCAT CCTGCAGAAC GGGGGCCCA TGTTCCCTT
CCGCCCGTG GAGGAGGATC ACAGCAACAC CGAGTGGGC ATCGTGGAGT ACCAGCACGC CTTCAAGACC
CCGGATGCAG ATGCCGGTGA AGAAAGAGGA AGCGGAGCTA CTAACCTCAG CCTGCTGAAG CAGGCTGGAG
ACGTGGAGGA GAACCCTGGA CCTATGACCG AGTACAAGC CACGGTGC GCCTGCCACC GCGACGACGT
CCCCAGGGC GTACGCACC TCGCCGCCG GTTCGCCGAC TACCCGCCA CGGCCACAC CGTCGATCCG
GACCGCCACA TCGAGCGGGT CACCGAGCTG CAAGAACTCT TCCTCACGG CGTCGGGCTC GACATCGGCA
AGGTGTGGT CGCGGACGAC GGCGCCCGG TGGCGTCTG GACCACGCC GAGAGCGTCG AAGCGGGGGC
GGTGTTCGC GAGATCGGCC CGCGCATGG CGAGTTGAGC GGTTCGGG TGGCCCGCA GCAACAGATG
GAAGCCCTC TGCGCCGCA CCGGCCAAG GAGCCCGCT GTTCTCTGG CACCCTCGG GTCTCGCCG
ACCACCAGG CAAGGTCTG GGCAGCGCG TCGTGTCCC CGGAGTGGAG GCGGCCGAGC GCGCCGGGT
GCCCGCTT CTGGAGACT CCGCGCCCG CAACCTCCC TTCTACGAG GGCTCGGCT CACCGTCACC
GCCGACGTC AGGTGCCGA AGGACCGCG ACCTGGTGA TGACCCGCA GCCCGGTGCC TGAAACTTGT
TTATTGCAG TTATAATGG TACAAATAA GCAATAGCAT CACAAATTC ACAAATAAG CATTTTTTT
ACTGCATTCT AGTTGTGGT TGTCCAACT CATCAATGA TCTTAATAAC TTCGTATAAT GTATGCTATA CGAAGTTAT
    
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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_011382](#), [NM_001362272](#)

UniProt ID: [Q61321](#)

Synonyms: AI047561; AREC3; TrexBF

Summary:

Transcriptional regulator which can act as both a transcriptional repressor and activator by binding a DNA sequence on these target genes and is involved in processes like cell differentiation, cell migration and cell survival. Transactivates gene expression by binding a 5'-[CAT]A[CT][CT][CTG]GA[GAT]-3' motif present in the Trex site and from a 5'-TCA[AG][AG]TTNC-3' motif present in the MEF3 site of the muscle-specific genes enhancer (PubMed:14966291). Acts cooperatively with EYA proteins to transactivate their target genes through interaction and nuclear translocation of EYA protein (PubMed:10490620). Acts synergistically with SIX1 to regulate target genes involved in formation of various organs, including muscle, kidney, gonad, ganglia, olfactory epithelium and cranial skeleton. Plays a role in several important steps of muscle development. Controls the genesis of hypaxial myogenic progenitors in the dermomyotome by transactivating PAX3 and the delamination and migration of the hypaxial precursors from the ventral lip to the limb buds through the transactivation of PAX3, MET and LBX1 (PubMed:15788460). Controls myoblast determination by transactivating MYF5, MYOD1 and MYF6 (PubMed:15788460, PubMed:17592144). Controls somitic differentiation in myocyte through MYOG transactivation (PubMed:15788460). Plays a role in synaptogenesis and sarcomere organization by participating in myofiber specialization during embryogenesis by activating fast muscle program in the primary myotome resulting in an up-regulation of fast muscle genes, including ATP2A1, MYL1 and TNNT3 (PubMed:19962975, PubMed:21884692). Simultaneously, is also able to activate inhibitors of slow muscle genes, such as SOX6, HRASLS, and HDAC4, thereby restricting the activation of the slow muscle genes (PubMed:21884692). During muscle regeneration, negatively regulates differentiation of muscle satellite cells through down-regulation of MYOG expression (PubMed:20696153). During kidney development regulates the early stages of metanephros development and ureteric bud formation through regulation of GDNF, SALL1, PAX8 and PAX2 expression (PubMed:17300925). Plays a role in gonad development by regulating both testis determination and size determination. In gonadal sex determination, transactivates ZFPM2 by binding a MEF3 consensus sequence, resulting in SRY up-regulation. In gonadal size determination, transactivates NR5A1 by binding a MEF3 consensus sequence resulting in gonadal precursor cell formation regulation (PubMed:23987514). During olfactory development mediates the specification and patterning of olfactory placode through fibroblast growth factor and BMP4 signaling pathways and also regulates epithelial cell proliferation during placode formation (PubMed:19027001). Promotes survival of sensory neurons during early trigeminal gangliogenesis (PubMed:16938278). In the developing dorsal root ganglia, up-regulates SLC12A2 transcription (PubMed:15955062). Regulates early thymus/parathyroid organogenesis through regulation of GCM2 and FOXN1 expression (PubMed:16530750). Forms gustatory papillae during development of the tongue (PubMed:21978088). Also plays a role during embryonic cranial skeleton morphogenesis (PubMed:20515681).[UniProtKB/Swiss-Prot Function]

Product images:

