

Supplementary Table S1. Sequence of the final targeting vector

1 TTAATA TTTTGT TAAAAT TCGCGT TAAATT TTTGTT AAATCA GTCAT TTTTTA ACCAAT
61 AGGCCG AAATCG GCAAAA TCCCTT ATAAAT CAAAAG AATAGA CCGAGA TAGGGT TGAGTG
121 TTGTTC CAGTTT GGAACA AGAGTC CACTAT TAAAGA ACGTGG ACTCCA ACGTCA AAGGGC
181 GAAAAA CCGTCT ATCAGG GCGATG GCCCAC TACGTG AACCAT CACCCT AATCAA GTTTTT
241 TGGGGT CGAGGT GCCGTA AAGCAC TAAATC GGAACC CTAAAG GGAGCC CCCGAT TTAGAG
301 CTTGAC GGGGAA AGCCGG CGAACG TGGCGA GAAAGG AAGGGA AGAAAG CGAAAG GAGCGG
361 GCGCTA GGGCGC TGGCAA GTGTAG CGGTCA CGCTGC GCGTAA CCACCA CACCCG CCGCGC
421 TTAATG CGCCGC TACAGG GCGCGT CAGGTG GCACTT TTCGGG GAAATG TGC GCG GAACCC
481 CTATTT GTTTAT TTTTCT AAATAC ATTCAA ATATGT ATCCGC TCATGA GACAAT AACCCCT
541 GATAAA TGCTTC AATAAT ATTGAA AAAGGA AGAGTA TGAGTA TTCAAC ATTTCC GTGTCC
601 CCCTTA TTCCCT TTTTTC CGGCAT TTTGCC TTCCTG TTTTTC CTCACC CAGAAA CGCTGG
661 TGAAAG TAAAAG ATGCTG AAGATC AGTTGG GTGCAC GAGTGG GTTACA TCGAAC TGGATC
721 TCAACA GCGGTA AGATCC TTGAGA GTTTTC GCCCCG AAGAAC GTTTTC CAATGA TGAGCA
781 CTTTTA AAGTTC TGCTAT GTGGCG CGGTAT TATCCC GTATTG ACGCCG GGCAAG AGCAAC
841 TCGGTC GCCGCA TACACT ATTCTC AGAATG ACTTGG TTGAGT ACTCAC CAGTCA CAGAAA
901 AGCATC TTACGG ATGGCA TGACAG TAAGAG AATTAT GCAGTG CTGCCA TAACCA TGAGTG
961 ATAACA CTGCGG CCAACT TACTTC TGACAA CGATCG GAGGAC CGAAGG AGCTAA CCGCTT
1021 TTTTGC ACAACA TGGGGG ATCATG TAACTC GCCTTG ATCGTT GGGAAC CGGAGC TGAATG
1081 AAGCCA TACCAA ACGACG AGCGTG ACACCA CGATGC CTGTAG CAATGG CAACAA CGTTGC
1141 GCAAAC TATTAA CTGGCG AACTAC TTAATC TAGCTT CCCGGC AACAAT TAATAG ACTGGA
1201 TGGAGG CGGATA AAGTTG CAGGAC CACTTC TGCGCT CGGCCC TTCCGG CTGGCT GGTTTA
1261 TTGCTG ATAAAT CTGGAG CCGGTG AGCGTG GGTCTC GCGGTA TCATTG CAGCAC TGGGGC
1321 CAGATG GTAAGC CCTCCC GTATCG TAGTTA TCTACA CGACGG GGAGTC AGGCAA CTATGG
1381 ATGAAC GAAATA GACAGA TCGCTG AGATAG GTGCCT CACTGA TTAAGC ATTGGT AACTGT
1441 CAGACC AAGTTT ACTCAT ATATAC TTTAGA TTGATT TAAAAC TTCATT TTAAAT TAAAAA
1501 GGATCT AGGTGA AGATCC TTTTTC ATAATC TCATGA CCAAAA TCCCTT AACGTG AGTTTT
1561 CGTTCC ACTGAG CGTCAG ACCCCG TAGAAA AGATCA AAGGAT CTTCTT GAGATC CTTTTT
1621 TTCTGC GCGTAA TCTGCT GCTTGC AAACAA AAAAAC CACCGC TACCAG CGGTGG TTTGTT
1681 TGCCGG ATCAAG AGCTAC CAACTC TTTTTC CGAAGG TAACTG GCTTCA GCAGAG CGCAGA
1741 TACCAA ATACTG TTCTTC TAGTGT AGCCGT AGTTAG GCCACC ACTTCA AGAACT CTGTAG
1801 CACCGC CTACAT ACCTCG CTCTGC TAATCC TGTTAC CAGTGG CTGCTG CCAGTG GCGATA
1861 AGTCGT GTCTTA CCGGGT TGGACT CAAGAC GATAGT TACCGG ATAAGG CGCAGC GGTCCG
1921 GCTGAA CGGGGG GTTCGT GCACAC AGCCCA GCTTGG AGCGAA CGACCT ACACCG AACTGA
1981 GATACC TACAGC GTGAGC TATGAG AAAGCG CCACGC TTCCCG AAGGGA GAAAGG CGGACA
2041 GGTATC CGGTAA GCGGCA GGGTCG GAACAG GAGAGC GCACGA GGGAGC TTCCAG GGGGAA
2101 ACGCCT GGTATC TTTATA GTCCTG TCGGGT TTCGCC ACCTCT GACTTG AGCGTC GATTTT
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2221 GGTTCG TGGCCT TTTGCT GGCCTT TTGCTC ACATGT TCTTTC CTGCGT TATCCC CTGATT
2281 CTGTGG ATAACC GTATTA CCGCCT TTGAGT GAGCTG ATACCG CTCGCC GCAGCC GAACGA
2341 CCGAGC GCAGCG AGTCAG TGAGCG AGGAAG CGGAAG AGCGCC CAATAC GCAAAC CGCCTC
2401 TCCCCG CGCGTT GGCCGA TTCATT AATGCA GCTGGC ACGACA GGTTC CCGACT GGAAAG

2461 CGGGCA GTGAGC GCAACG CAATTA ATGTGA GTTAGC TCACTC ATTAGG CACCCC AGGCTT
2521 TACACT TTATGC TTCCGG CTCGTA TGTTGT GTGGAA TTGTGA GCGGAT AACAAAT TTCACA
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2761 GAGGCG CTCCCA GGTTCG GGCCCT CCCCTC GGCCCC GCGCCG CAGAGT CTGGCC GCGCGC
2821 CCCTGC GCAACG TGGCAG GAAGCG CGCGCT GGGGGC GGGGAC GGGCAG TAGGGC TGAGCG
2881 GCTGCG GGGCGG GTGCAA GCACGT TTCCGA CTTGAG TTGCCT CAAGAG GGGCGT GCTGAG
2941 CCAGAC CTCCAT CGCGCA CTCCGG GGAGTG GAGGGA AGGAGC GAGGGC TCAGTT GGGCTG
3001 TTTTGG AGGCAG GAAGCA CTTGCT CTCCCA AAGTCG CTCTGA GTTGTT ATCAGT AAGGGA
3061 GCTGCA GTGGAG TAGGCG GGGAGA AGGCCG CACCCT TCTCCG GAGGGG GGAGGG GAGTGT
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3301 GAATTG AACAGG TGTAAG ATTGGA GGGACA AGACTT CCCACA GATTTT CGGTTT TGTCGG
3361 GAAGTT TTTTAA TAGGGG CAAATA AGGAAA ATGGGA GGATAG GTAGTC ATCTGG GGTTTT
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3481 GTAGAT TAAAGA CATGCT CACCCG AGTTTT ATACTC TCCTGC TTGAGA TCCTTA CTACAG
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3601 GCCCAG TACTTC ATATCC ATTCTC CCCGCT CTTTCT GCAGCC TTATCA AAAGGT ATTTA
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3961 ACAATA GATGTA TTGAGA ATCCAA CCTAAA GCTTAA CTTTCC ACTCCC ATGAAT GCCTCT
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4321 GACTGG CTTGAC TCATGG CATTCT ACACGT TATTGC TGGTCT AAATGT GATTTT GCCAAG
4381 CTCTTT CAGGAC CTATAA TTTTGC TTGACT TGTAGC CAAACA CAAGTA AAATGA TTAAGC
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4861 GGAGCC ATAACG GCAGAC TTGTGG GATACA GAAGAC CAATGC AGACTT TAATGT CTTTTC
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4981 GCTAGC TTTACT TAACTT TTGTGC TTCATC TATACA AAGCTG AAAGCT AAGTCT GCAGCC
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5221 AGCCAG GAATAC ACACAG AAACCC TGTTGG GGAGGG GGGCTC TGAGAT TTCATA AAATTA
5281 TAATTG AAGCAT TCCCTA ATGAGC CACGTC GACATT GATTAT TGACTA GTTATT AATAGT
5341 AATCAA TTACGG GGTCAT TAGTTC ATAGCC CATATA TGGAGT TCCGCG TTACAT AACTTA
5401 CGGTAA ATGGCC CGCCTG GCTGAC CGCCCA ACGACC CCCGCC CATTGA CGTCAA TAATGA
5461 CGTATG TTCCCA TAGTAA CGCCAA TAGGGA CTTTCC ATTGAC GTCAAT GGGTGG AGTATT
5521 TACGGT AAAC TGCCAG TACATC AAGTGT ATCATA TGCCAA GTACGC CCCCTA
5581 TTGACG TCAATG ACGGTA AATGGC CCGCCT GGCATT ATGCCC AGTACA TGACCT TATGGG
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5701 GCCCCA CGTTCT GCTTCA CTCTCC CCATCT CCCCCC CCTCCC CACCCC CAATTT TGTATT
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6001 CCCGCT CCGCCG CCGCCT CGCGCC GCCCGC CCCGGC TCTGAC TGACCG CGTTAC TCCAC
6061 AGGTGA GCGGGC GGGACG GCCCTT CTCCTC CGGGCT GTAATT AGCGCT TGGTTT AATGAC
6121 GGCTTG TTTCTT TTCTGT GGCTGC GTGAAA GCCTTG AGGGGC TCCGGG AGGGCC CTTTGT
6181 GCGGGG GGAGCG GCTCGG GGGGTG CGTGCG TGTGTG TGTGCG TGGGGA GCGCCG CGTGCG
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6421 CGTCGG TCGGGC TGCAAC CCCCC TGACCC CCCCTC CCCGAG TTGCTG AGCACG GCCCGG
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7141 GAATTG CGAGGT ATCGCA TTATCG ATCGAT AAGCTA GCTTGG GCTGCA GGTGCA GGGACC
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7261 TGGGGA TCCAGA CATGAT AAGATA CATTGA TGAGTT TGGACA AACCAC AACTAG AATGCA
7321 GTGAAA AAAATG CTTTAT TTGTGA AATTTG TGATGC TATTGC TTTATT TGTAAC CATTAT
7381 AAGCTG CAATAA ACAAGT TAACAA CAACAA TTGCAT TCATTT TATGTT TCAGGT TCAGGG
7441 GGAGGT GTGGGA GGTTTT TTAAAG CAAGTA AAACCT CTACAA ATGTGG TATGGC TGATTA
7501 TGATCC TCTAGA GTCGCA GATCCA GACATG ATAAGA TACATT GATGAG TTTGGA CAAACC
7561 ACAACT AGAATG CAGTGA AAAAAA TGCTTT ATTTGT GAAATT TGTGAT GCTATT GCTTTA
7621 TTTGTA ACCATT ATAAGC TGCAAT AAACAA GTTAAC AACAAC AATTGC ATTCAT TTTATG
7681 TTTCAG GTTCAG GGGGAG GTGTGG GAGGTT TTTTAA AGCAAG TAAAAA CTCTAC AAATGT

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7861 ATGCTA TTGCTT TATTTG TAACCA TTATAA GCTGCA ATAAAC AAGTTA ACAACA ACAATT
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8761 TCCACA TTTCTG TGATGG GTGGCC TCATCG CGCTGC TGCTGC TGCTGC TGGTGT TCACCG
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11821 TGATGG AGGTCT CAGCCT CGATGC TGTTCC GAGTCC AGCACC ACTACA ACTCTC ACTATG
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12841 ACGTCC AGCCAA GCTAGC TCCATG GGCCAG GCAAAT ATCCCT TACCAG CCTCAC AGAGAC
12901 CTCCCC CACCCC CCGCAA CCTAG AGTTCT TTTACT AGTGAG GGACAA GTGGAC AATGGT
12961 GCTGTT GTGGGC CCCACC CTGTGT CCCCTG TGCCCA CAGTGG TCACTC TGCTTG GCAGGC

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13201 CGTTAC CCGACA ACTATC CAGAGG GCATTG GTAAAG CTCTGA GTGAGG GTGGAC TGGGAC
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13861 CTATGC TTAATA TGCTTC TGTCCC ACTGCG GACTGC CACCCT TGTCCG ACGACA AGTCAG
13921 TGAGTC TTGCCA TGAGAA GAATTA GAAGAG AAGCCG CAACCG AAAAGG GTGAGA GGACAG
13981 GACAGG CAATCC CCCTGC GCTGGG ACGACC TGAAGC TGCTGG ATGTGC TGCTCA GCAGGA
14041 GCGAGC GGCTGG TCGACC TGCGCA ACAGGG CTTTCC TGTTTC TAGCCT ATAACA CCCTCA
14101 TGAGAA TGTCTG AAATAT CACGCA TCAGGG TTGGGG ACTTGG ATCAGA CAGGAG ACACAG
14161 TGACCC TGCACA TCAGTC AACTA AGACAA TCACCA CAGCTG CGGGCC TTGACA AAGTGC
14221 TCTCCC GCGGAA CCACAG CAGTGC TCAATG ACTGGC TGGACG TCAGTG GGCTTA GAGAAC
14281 ATCCAG ACGCTG TGCTCT TCCCAC CTATAC ACCGGT CAAACA AAGCCC GCATTA CTACCA
14341 CGCCCC TGACCG CCCCTG CCATGG AGAAGA TTTTCA GTGATG CCTGGG TGCTGC TGAACA
14401 AACGGG ACGCCA CCCCCA ATAAAG GGAGGT ATAGGA CCTGGA CCGGCC ATTCCG CCAGGG
14461 TGGGTG CCGCAA TAGACA TGGCCG AGAAAC AGGTGT CTATGG TCGAGA TTATGC AGGAAG
14521 GGACAT GGAAGA AGCCTG AAACAC TGATGC GGTATC TCAGAA GGGGCG GAGTGT CCGTGG
14581 GAGCCA ATTCTC GACTGA TGGATA GCTAAA CTTGTT TATTGC AGCTTA TAATGG TTACAA
14641 ATAAAG CAATAG CATCAC AAATTT CACAAA TAAAGC ATTTTT TTCACT GCATTC TAGTTG
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14761 GTCGTC GAAATT CTACCG GGTAGG GGAGGC GCTTTT CCCAAG GCAGTC TGGAGC ATGCGC
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15061 GAAGCG GGTAGG CTTTG GGGCAG CGGCCA ATAGCA GCTTTG CTCCTT CGCTTT CTGGGC
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15361 TCGGCC ATTGAA CAAGAT GGATTG CACGCA GGTTC CCGGCC GCTTGG GTGGAG AGGCTA
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19201 GTTCTC AGAAGC AAGCAG AGGCAT GATGGT CAGTGA CAGTAA TGTCAC TGTGTT AAATGT
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20941 GTCGGG GCGGCG CGGTCC GAGGTC CACTTC GCATAT TAAGGT GACGCG TGTGGC CTCGAA
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Notes: Homology arms; KI region; SDA sites; loxP sites; Exons; Sequence confirmed regions