

ZKO84, 85, 86, 87, 88, 89

Target Position: upstream and downstream sequences flanking zko84-89 (mir-17a-1, mir-18a, mir-19a, mir-20a, mir-19b, mir-92a) gene cluster

Sense Strand Sequence

upstream target site

cgcatggtagtcctctccacctccatagttggggagaatgtgggagatttгааagcatgctgctgcattgcaactacc
aactattttatttcgccgcagcctgcgcgatacgttgaatcagcctcgtagacgcgcgtcggcgtgccgggatgcaat
taagttgttttcgactgtggagtgatgttttcgcttggttgagcgtgcgagttaaagtgcctccagaacaaagcagta
gcacatggggggacgcgtaggccgcgcgcactggctagcttagcaacggcgcgctgcacaaaaacatccccctttt
tggccatcactttctgcttgactgtgaagtacgcgtggaatgtttgaattactaaacctgataattcacacaaagagcac
ctccg

<2048 bp>

downstream target site

gcagagtaagccgagtaatctagcatcccttaagtacacatgcttaatgcagaggggtggtcttaatccctatattgtag
tgtgtataaatggtactgtgtacaagtaaagcttttaaattatgttgattaggaaagtggttaaaaaatgtacaatatctt
gaattctgtgttactgctgaagtttctaatggttgactaccatgggtttcagctgctgtgcattggaatgttgggaggt
ttgctgtagccctgtgtaaagatgaacagtacattcattttatagtgaaagcatgttcttaagtttaaataaattgttg
ttagtccataggaagtacagccaatctctattcaaatacaaacctttgagcttatcactttattattattattattatt
ttttttttttattggtgttaagacaacatatcttagtatacaatacaacaggaagttacagactc

Uppercase: Exon/coding sequence

Lowercase: intron/noncoding sequence

atcg : Forward/Reverse primer

atcg : cas9 target site

ZKO84a: 2438bp deletion

CLUSTAL format alignment by MAFFT G-INS-i (v7.215)

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WT          cgctgcgagttaaagtgcctccagaacaaagcagtagcacatggggggacgcgtaggccg
ZKO84a      cgctgcgagttaaagtgcctccagaacaaagca-----
            *****

WT          cgcgcgcaactggctagcttagcaacggcgcgctgcacaaaaacatccccctttttggcc
ZKO84a      -----

WT          atcactttctgctttgactgtgaagttacgcgtggaatgtttgaattactaaacctgata
ZKO84a      -----

WT          attcacacaaagagcacctccgtttttcaacaattgttgttgatttcagtataggggatg
ZKO84a      -----
```

WT gattgagctagcttacgctageccgttgacagttaaactgtttactagctagtttcactctt
ZK084a -----

WT tgtgcaagtatcatgagctcgtcgtcgttgacgtaaatacatggttgatttcataaatt
ZK084a -----

WT caatgtgtacatgtttaaggcggaattctagcacgtagcttagcattagcagctatcga
ZK084a -----

WT tgtcctcggctgcacgcgaacgcaccaccgcgctactttattcccacaccggttcgttg
ZK084a -----

WT tttctacctgtttgacatgtgcaacttattgttgtcctaactgagtagtttaagcgaag
ZK084a -----

WT aatgatccggttggtgaactcaacggcgccatgtagtgagattgtttcgggctggggg
ZK084a -----

WT gggaggggtgaacggggagcgcctcctctgcgcatgcgccacacagacggacggcggtc
ZK084a -----

WT cgcagctgcgcaattcattcactcgtcaactctagttctcataacttgaaattaata
ZK084a -----

WT gtgaaacgcaccttcagaatggaatgagcgaactaggtaacgggtggtttggtggagttg
ZK084a -----

WT ttttaatggccgctaaaccgtcacatttgacatggatagtagtaccgcagtgccgtgtga
ZK084a -----

WT catgtgctttgcatgaggecctcgtttttgtagtatagaaagtcaacccatgtaccat
ZK084a -----

WT caatatctattgtatttgaataattctacagtaacaaactaactcaaatatttctcccc
ZK084a -----

WT ttccccctctcagaattcccagaaagatgggagtagttgcacgcaagtGGACTTCTT
ZK084a -----

WT GAGTGGACTTGGTTGGTGTCAATGTATTGTCAAAGTGCTTACAGTGCAGGtagtattatg
ZK084a -----

WT gaatatctactgcagtgagggeacttctagcaatacacttgaccattttaaccttctcc
ZK084a -----

| | |
|--------|--|
| WT | aggcatccttcggcaagacaccaacctaacGGCTTTGTGCTAAGGTGCATCTAGTGCAG |
| ZK084a | ----- |
| WT | ATAGTGAAGTAGACTAGCACCTACTGCCCTAagtgctccttcggcacgaggtctgtga |
| ZK084a | ----- |
| WT | cttgcacccatataatatttgctgctgtgtgtttatgtaatcttccctcatttttc |
| ZK084a | ----- |
| WT | tttGGTGCAGTTCTCTGCTAGTTTGCATAGTTGCACTACAAGAAAACGGGAGTTGTGC |
| ZK084a | ----- |
| WT | AAActatgcaaaactgatggcctgctgcttctccacgattcccatgttttgatttt |
| ZK084a | ----- |
| WT | gtaaaatcaaagtttctcgattaatcgccgtccccccagccccttcatattttctctc |
| ZK084a | ----- |
| WT | ccctTCTTAAATAAATCTCCTAATGTTGCAGTTGTGTTAGAGTTTCAGCAGTGCTAAAGT |
| ZK084a | ----- |
| WT | GCTTatagtcaggtagtagtatttctgtcatctactgcagtgtagcacttgaagtactct |
| ZK084a | ----- |
| WT | agcttaatgcgtctgggatccgaagatttctgctagaaatcctgaggtctgcgtgcgcta |
| ZK084a | ----- |
| WT | tttgaccttGCTGGACCCCGGCAGTTTGGCTGGTTGCATTCAGCTTTTAAGACTGTG |
| ZK084a | ----- |
| WT | CGCTGTGCAaatccatgcaaaactgattgtggcagcacacttctaagcacttgttttg |
| ZK084a | ----- |
| WT | gagtcgttGGTCCCTTTCTGCGCAGGTTGGGATTGGTAGCAATGCTGTGTGTTTGAAG |
| ZK084a | ----- |
| WT | GTATTGCActtgtcccggcctgtaaaggattgtggagattgtacccacaaatattttta |
| ZK084a | ----- |
| WT | tttccatttcatttgccattcgttatttttcattattcatttaagcatttttttttt |
| ZK084a | ----- |

WT ttgagaattactttttataaacaccttgatactgtgatttgaatgaatgcaaaagcttgtc
ZK084a -----

WT aataaaatattgcgatgcatcatctttgtttcatttattatcttaacctgtaattttta
ZK084a -----

WT caccatgcaaggcatgattaacatcttagacacttgcttgctatgctgtaagtgtgttaa
ZK084a -----

WT tgacttgggtttttataaaccaacataatcggacaaatcaacatagtctatcagctgctc
ZK084a -----

WT ttcagatttatcaaatccaattataaaaatgcagagtaagccgagtaatctagcatcct
ZK084a -----

WT ttaagtacacatgcttaatgcagaggggtgctttaatccctatattgtagtgtgataa
ZK084a -----

WT atggtacttgtacaagtaaagcttttaaaattatgttgattaggaaagtggtttaaaaaa
ZK084a -----

WT tgtacaatatcttgaattctgtgttcactgctgaagtttctctaatggttgactaccat
ZK084a -----

WT ggtgttcagctgctgtgcattggaatggtggagggttgctgtag
ZK084a -----gctgtgcattggaatggtggagggttgctgtag
