

## ZK0912, ZK0913

Target Position: upstream and downstream sequences flanking zko912-913 (mir-16b, mir-15a-1) gene cluster

### Sense Strand Sequence

gtcatctctgtcaaaggcatcctcacattcacaacaaactttaagcatgaaaaacaatgcatgaccttgaaattggac  
agagctctgccaattttccaggtttccatttagagcgaaactaaagatgttcaacttgaaacctaataaataaaata  
tgttacactttgtatgtttttccatacatccttatcttagtaatctatgtcatgttgcatgtagcacaaccaacatgag  
ccataacagcccacaagccaggagaagtcacacattcaataaaattgcctcttagtattttatcctattttaagtta  
gtttcagatgttctgagcaagcttggatcctttttgatgtcattttggttattaaattacaagatgcatccgtattgacact  
tctttctccctttgtgttgatcctgtgtttcaggttgcgaaacgagaaccgtgctgtgtgtgtgtgctgagcggatgtgtggg  
cgcgctcctcgcgtgagtgctgtgtgcgcgctctgtgcggggCCTGTCTGGTACTGTAGCAGCACAGAAT  
GGTTGTGAGTTATAACGGGGGGTGCAGGCCGTACTGTGCTGCGGCAACAACGACAGGacag  
acgcgacttcccattcaaacgggtgaaacaccgagaagaaagatgaagtagactaaacaacagcggcagcagcaa  
gactacgtgtgctgcgagctcCCTGAACCTGGCCGTGTGACAGACTGGCTGCCTGGCTGTAGCAGC  
ACGTAAATATTGGAGTCAAAGCACTTGCGAATCCTCCAGTATTGACCGTGCTGCTGGAGTTA  
GGCGGGCCGTTTACCGTCTGCGGGGGCCTCGGGatccctcatctcgtcacttgaagaccaacgactttct  
aatgacatgctggcctaagactgtgttttagatgcttttattctgggagaacagatgacatgaaatctgatattacatcc  
aatgcgctgtataattgtttgaattcgatttttagatgggtcagatgcttctgcataagtctttgagctcgttgatgaaat  
gtacttgaaaatgaaataaaaaataaagataaaaaatataaaatccatcatttttgacagactatthaatgtactga  
attatgggtctatatcaaattcataatttctcagaagaaatgtttaccatttctagacgttacggagctctacctgtaact  
ttttgctgaggcacaccgatgaagagtataaaatgtgtcttattacagtggttggtcatcacatcagtaagtact  
ctcgtctttttttcacattttgtataacgcagcatcggcatcttctgggaaacttcaatggcttcaagttttatttagatc  
ccccgttcttttaagctatttttagggagggggtgcagacagaattaatcggttagacaggcccccttttggtacttttag  
gtgtttgtttgatatttcgcgttttctttcccttgtaagggcc

Uppercase: Exon/coding sequence

Lowercase: intron/noncoding sequence

atcg : Forward/Reverse primer

atcg : cas9 target site

### ZK0912a: 843bp deletion

CLUSTAL format alignment by MAFFT FFT-NS-i (v7.215)

```
WT          ATGTTTGTGAGTTATAACGGGGTGCAGGCCGTACTGTGCTGCGGCAACAACGACAGGa
ZK0913a     ATGTTTGTGAGTTATAACGGGGTGCAGGCCGTACTGTGCT-----
          *****

WT          cagacgcgacttcccattcaaacgggtgaaacaccgagaagaaagatgaagtagactaa
ZK0913a     -----
```

WT aacaacagcggcagcagcaagactacgtgtgcctgcgagtctCCTGAACTTGGCCGTGTG  
ZK0913a -----

WT ACAGACTGGCTGCCTGGCTGTAGCAGCACGTAAATATTGGAGTCAAAGCACTTGCGAATC  
ZK0913a -----

WT CTCCAGTATTGACCGTGCTGCTGGAGTTAGGCGGGCCGTTACCGTCTGCGGGGGCCTCG  
ZK0913a -----

WT GGatccctcatctcgtcacttgaagaccaacgacttttctaataatgacatgctggcctaataga  
ZK0913a -----

WT ctgtgttttagatgcttttattctgggagaacagatgacatgaaatctgatattacatc  
ZK0913a -----

WT caatgcgctgtataattgtttgtaattcgattttagatgggtcagatgcttctgcataa  
ZK0913a -----

WT gtgctttgagctcgttgatgaaatgtacttgaaaatgaaataaaaaataagataaaaaat  
ZK0913a -----

WT attaaaaatcaccatcattttttgacagactatttaatgtactgaattatgggctgtatat  
ZK0913a -----

WT caaattcataatttctcagaagaaatgtttaccatttctagacgttacggagctctacct  
ZK0913a -----

WT gctaactttttggtcgaggcacaccgatgaagagtataaaatgtgtcgtattacagtgt  
ZK0913a -----

WT tgtggcatcatcacatcagtaatgtactctccgtctttatttcacattttgtataacgc  
ZK0913a -----

WT agcatcgccatcttctgggaaacttcaaattggcttcaagttttattagatcccccggt  
ZK0913a -----

WT tcttttaagctattattaggggaggggtgcagacagaattaatcggtagacaggccct  
ZK0913a -----ggtagacaggccct  
\*\*\*\*\*

WT tttggtacttttaggtgtttgtttgatattc  
ZK0913a tttggtacttttaggtgtttgtttgatattc  
\*\*\*\*\*