

ZK033

Target Position: exon 2

Sense Strand Sequence

CCCGCAGAAGCAGTATAAGGTA GCGCGGGGTGATAATGCGACGCTGCCCTGCGCCTTCACCC
CGCCGCGGCCGCGCCGATCCACCACTGAGATCACCTGGAAAGCGACTCCAGATGTGCCGGGA
TCTCCAATGgtgaaacacacactctaccaacatgctgagctgttataagccaagtgtgggtcatacacaacaatgggtt
caaagttacaattaaacttaaattaaaccttaaccagcagattttctctcatatttgaccaacagcacatttctgagtg
tttgtgtccgtaacacagtttgttctgtctgtgtccccagATCGACATCATCAAATTCAACAGTGCCACTGG
AATGAAGGTGTACAAGAACTATAAGGGCCGGGC GGGTCTGACGTTTGATCTGACT

Uppercase: Exon/coding sequence

Lowercase: intron/noncoding sequence

atcg : Forward/Reverse primer

atcg : cas9 target site

ZK033a: 14bp deletion,5bp insertion

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

```
WT          GGTAGCGCGGGGTGATAATGCGACGCTGCCCTGCGCCTTCACCCGCGCCGCCGCGCCGG
ZK033a      GGTAGCGCGGGGTGATAATGCGACGCTGCCCTTCACC-----CCGCCGCGCCGCCGG
*****
***** *.* *****
```

```
WT          ATCCACCACT
ZK033a      ATCCACCACT
*****
```

ZK033b: 3bp deletion

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

```
WT          GGTAGCGCGGGGTGATAATGCGACGCTGCCCTGCGCCTTCACCCGCGCCGCCGCGCCGG
ZK033b      GGTAGCGCGGGGTGATAATGCGACGCTGCCCTGCGCCTTCACC---CCGCCGCGCCGCCGG
*****
***** *****
```

```
WT          ATCCACCACT
ZK033b      ATCCACCACT
*****
```