

ZK059

Target Position: exon 5

Sense Strand Sequence

```
ttcaaacggaagtgaaccataattgaaatggagtcactgctggaaaaatgtagttataaattctatacaaatgtaacaatctgtg  
gtgttatatctgttctgcagCTGTACCTGGGACTTGTGCTTGCCTTGTTGGTCATAGTCAATGGATGGTTCTCATTCT  
ATCAGGAATCCAAGAGTTCCAAAATCATGGAGTCTTTCAGGAATCTTGTCCACAGgtaaagaaaaatgtgtccttt  
aatgtccgaatgtaacttggtactggtactgcagtagtcattgttctgttcattcagCAAGCTCTAGTTGTGCGGGATGGAGAGA  
AAAAGGTCATCAATGCTGAGGAGGTCGTTGTCGGTGATCTTATAGAGGTCTGTGGTGGAGACAGAATCCCT  
GC
```

Uppercase: Exon/coding sequence

Lowercase: intron/noncoding sequence

atcg : Forward/Reverse primer

atcg : cas9 target site

ZK059a: 12bp deletion

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

```
WT          TCTGTTCTGCAGCTGTACCTGGGACTTGTGCTTGCCTTGTGGTCATAGTCAATGGATGG  
ZK059a      TCTGTTCTGCAGCTGTACCTGGGAC-----TTGTGGTCATAGTCAATGGATGG  
*****  
*****
```

```
WT          TTCTCATTCTAT  
ZK059a      TTCTCATTCTAT  
*****
```

ZK059b: 1bp deletion, 15bp insertion

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

```
WT          CTGCAGCTGTACCTGGGACTTGTGCTTGC-----TTTGTGGTCATAGTCA  
ZK059b      CTGCAGCTGTACCTGGGACTTGTGCTTGCAGCTTGTGGTCATGACTTGTGGTCATAGTCA  
*****  
*****
```

```
WT          ATGGATGGTTCTCAT  
ZK059b      ATGGATGGTTCTCAT  
*****
```