

**Supplemental Table S3. Summary of the sequences of sgRNA off-target primers used in the current study.**

Genomic position	Primer sequences		Product size (bp)
	Forward	Reverse	
sgRNA 1 target: CATTATATGTCACAGTGCCA TGG			
Off-target site 1: chr2: -58244737*: CATTCTATGACACAGTGCCA CAG			
Primer set 1	CTCCCAGTTCCCACCAGTAA	TTTGCCTGATCAAATCCAAA	360
Primer set 2	CTCCCAGTTCCCACCAGTAA	AAACAGGCAAGAGCAAAGTGA	402
Off-target site 2: chr21: +17964866: TAATATGTGTACAGTGCCA CAG			
Primer set 1	ATTTGGCAGAGGCTTCAGTG	AAACAGGACATGGGGAAACC	462
Primer set 2	TCCTGGTTTCCTGAGTGTC	TGGTTTCCAGATGTTCTTGG	304
Off-target site 3: chr1: +244973646: CGTTTTATTTACAGTGCCA CGG			
Primer set 1	TTGTGCAGAGTGCTTGAAC	TGAGCACAATAGCCCCTTCT	481
Primer set 2	GGTCTCTTTTCCCCTCTGCT	TGAGCACAATAGCCCCTTCT	321
Off-target site 4: chr11: +121235399: CAGTTTTGTACAGTGCCA TGG			
Primer set 1	TGCTGAAGCTGCAGTGAGTT	GCATTTCCAAAATTGCACCT	378
Primer set 2	GGCGCACACGCTTATATCTT	GCATTTCCAAAATTGCACCT	534
Off-target site 5: chr15: +100726923: GATGATATGTCCCAGTGCCA TAG			
Primer set 1	TACCATCCCCATTACCCTGA	ATGAGAACAATGCCCCTGAC	419
Primer set 2	CTATGCTCCCTCCTCACTGC	ATGAGAACAATGCCCCTGAC	469
sgRNA 2 target: GCATAAGACCGCACAGCTCC TGG			
Off-target site 1: chr2: chr10: -48464924: GAATGAGACCTCACAGCTCC TGG			
Primer set 1	AAGCCTCTTGGGAGGCTAAG	AACAGGTTCAAGGAGGAGGT	514
Primer set 2	AAGCCTCTTGGGAGGCTAAG	GGGAAAGTAGGCGATGTTCA	355
Off-target site 2: chr8: +111572: CCAGGAGCTGTCCAGTCT TAT			
Primer set 1	GATCCTAGCCTGCACTGCTC	CTCCATGTCATCTCCCTGCT	324
Primer set 2	GCTGCAGGCTTCAGTCTACC	GCTTCTTTGGGACTCTGCTG	479
Off-target site 3: chr6: -170696611: ACATAAGACTGGACAGCTCC TGG			
Primer set 1	GCTTCTTTGGGACTCTGCTG	TAGAAGCTGCTGTGCCTGAA	344
Primer set 2	GCTTCTTTGGGACTCTGCTG	GCTGCAGGCTTCAGTCTACC	479
Off-target site 4: chr1: +243006185: ACATAAGACTGGACAGCTCC TGG			
Primer set 1	GCTTCTTTGGGACTCTGCTG	GCTGCAGGCTTCAGTCTACC	462
Primer set 2	CTCCATGTCATCTCCCTGCT	GATCCTAGCCTGCACTGCTC	307
Off-target site 5: chr1: +223903393: ACATAAGACTGGACAGCTCC TGG			
Primer set 1	GTTCTGAGGGACAGAGACG	GGAGGTGACCAATCTTGAA	392
Primer set 2	GCTTCTTTGGGACTCTGCTG	GCTGCAGGCTTCAGTCTACC	479

\*: "+" and "-" indicate forward strand and reverse strand