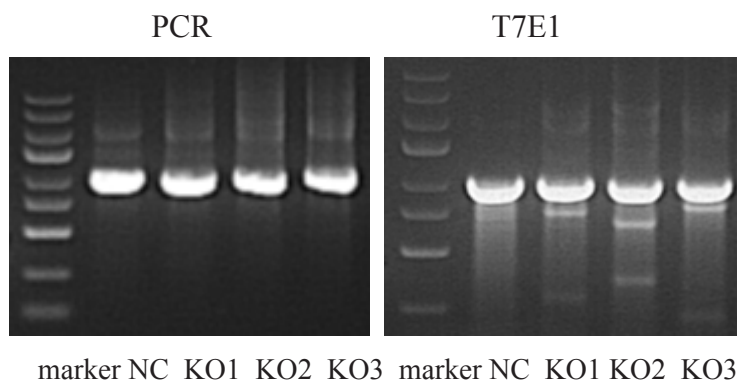


Supplementary Table 1

Gene	Species	Target number	sgRNA sequence
Pdc1	Mouse	KO1	CGGAGGATCTTATGCTGAAC
	Mouse	KO2	TGGTTTGAGCCAACCCGTCC
	Mouse	KO3	GATATCTTGTTGAGGTCTCC

Three crRNA/tracrRNA targeted murine PD-1 gene were designed and synthesized. The crRNA/tracrRNA was mixed with Cas9 protein to generate a Crispr/Cas9 ribonucleoprotein

Supplementary Figure 1



The knockout efficiency of three crRNA/tracrRNA was detected by T7E1 assays. The KO2 sequence showed maximum knockout efficiency and was selected for next experiment