

## Supplementary materials

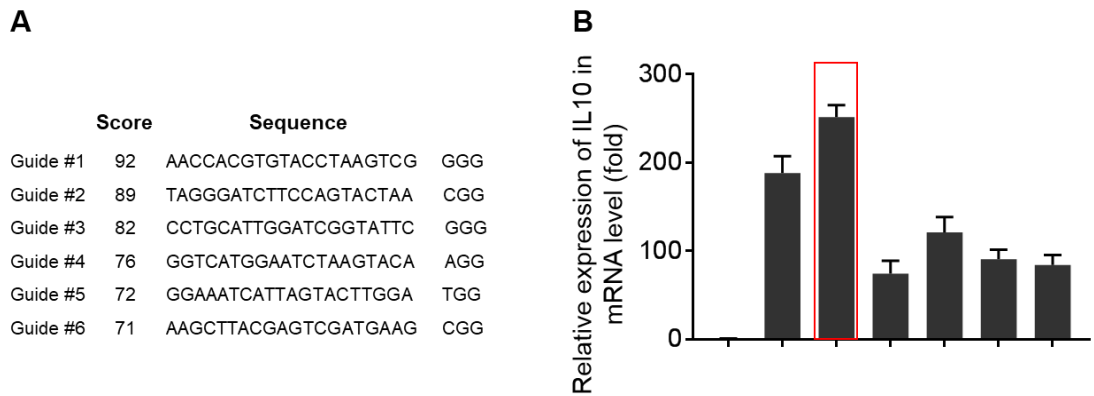


Figure S1. (A) gRNAs (gIL10) were designed using the CRISPR.mit.edu platform, and 6 candidate gRNA sequence were selected according to the scores. (B) Activation of IL10 expression after transfected with different pCas9/gIL10. The activation of IL10 were examined by real-time PCR. The Guide#2 was selected for the further experiments.

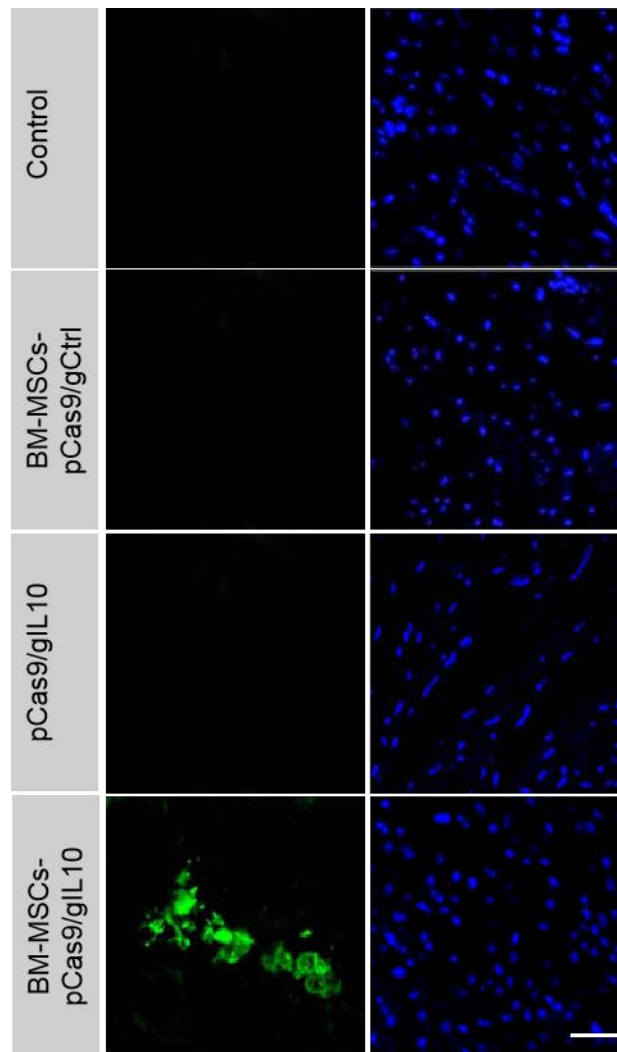


Figure S2. Representative confocal laser microscopic images of engrafted BM-MSCs at 4 weeks after transplantation. GFP positive cells indicated the alive BM-MSCs.

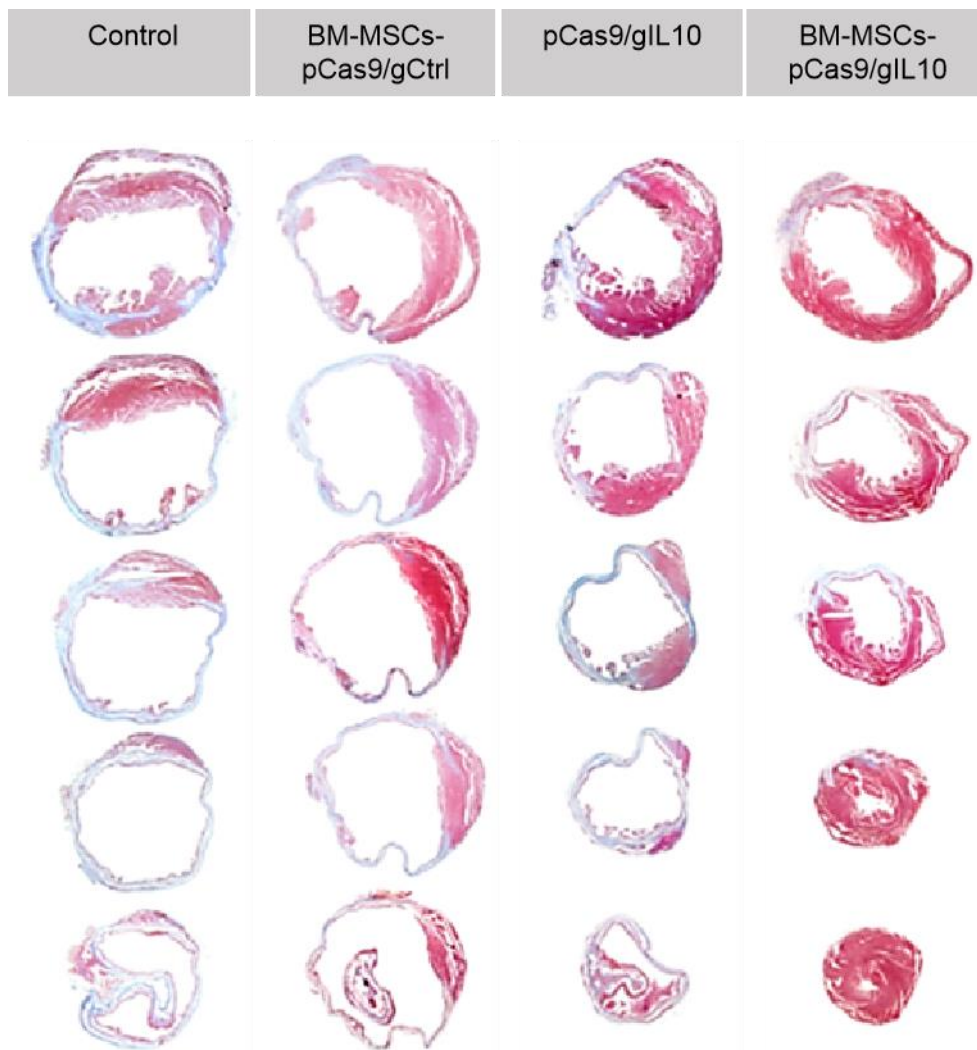


Figure S3. The five sections of the representative Masson's trichrome - stained myocardial sections in the control MI heart or hearts treated with BM-MSCs pCas9/gCtrl, pCas9/gIL10 or BM-MSCs pCas9/gIL10. Blue, scar tissue; red, viable myocardium.