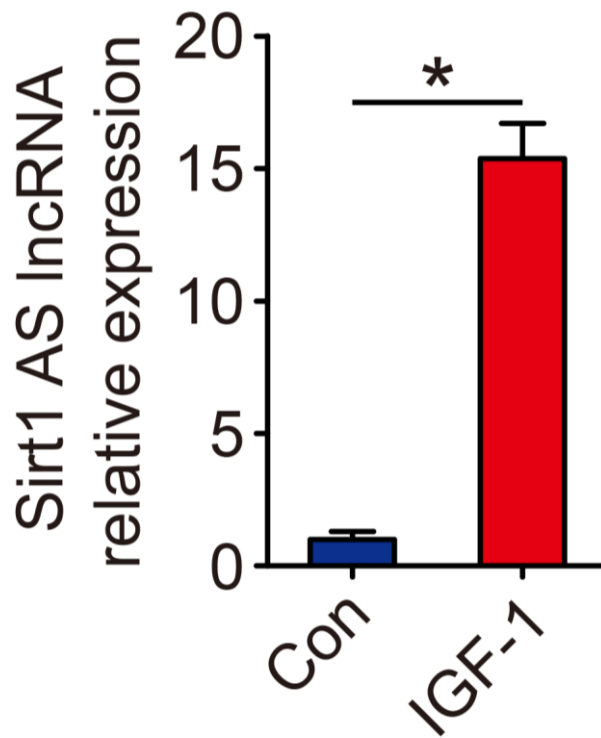


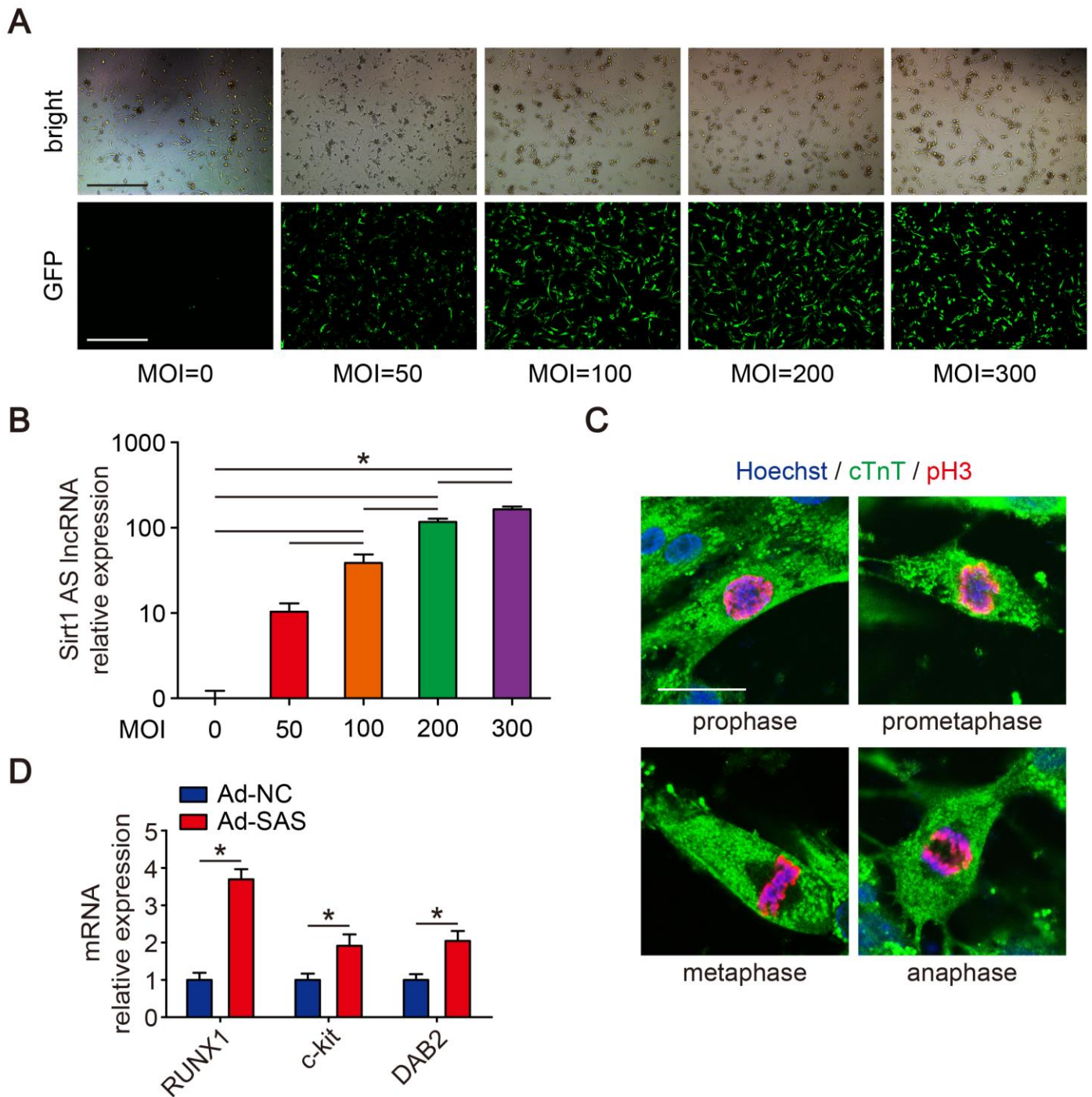
Supplemental Material

Figure S1. Expression of Sirt1 AS lncRNA in PBS- or IGF-1-treated CMs.



Real-time qPCR analyses of Sirt1 AS lncRNA levels in isolated P1 CMs treated with PBS or IGF-1 (n=3 mice per group). Statistical significance was calculated using two-tailed unpaired Student's t-test. * $p < 0.05$; error bars represent mean \pm s.e.m.

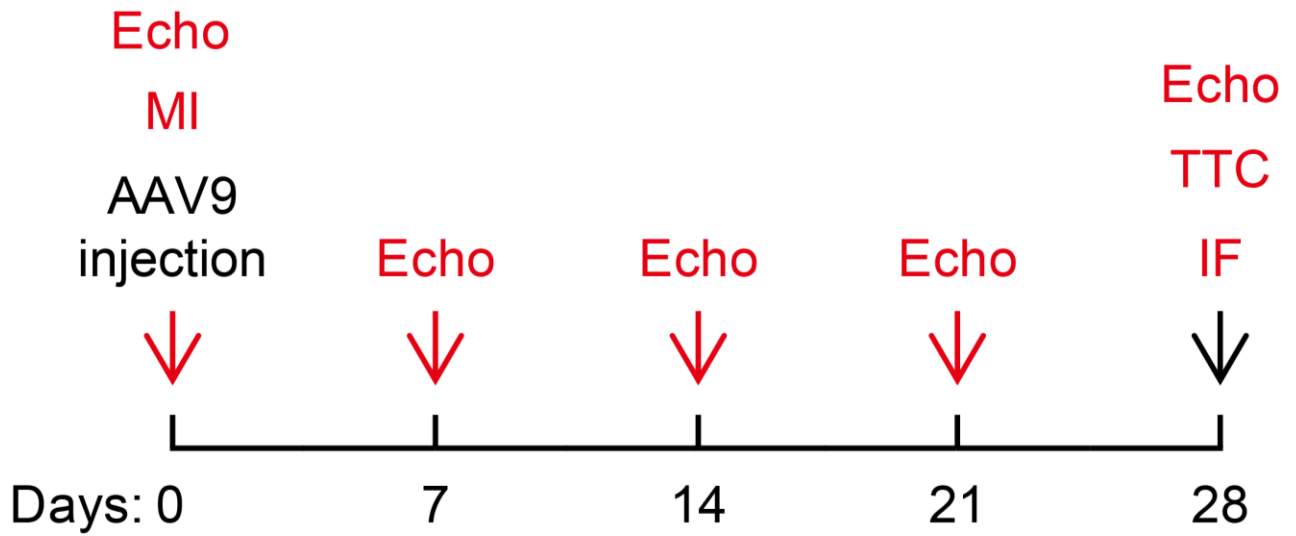
Figure S2. Sirt1 AS lncRNA promotes CM proliferation and dedifferentiation *in vitro*.



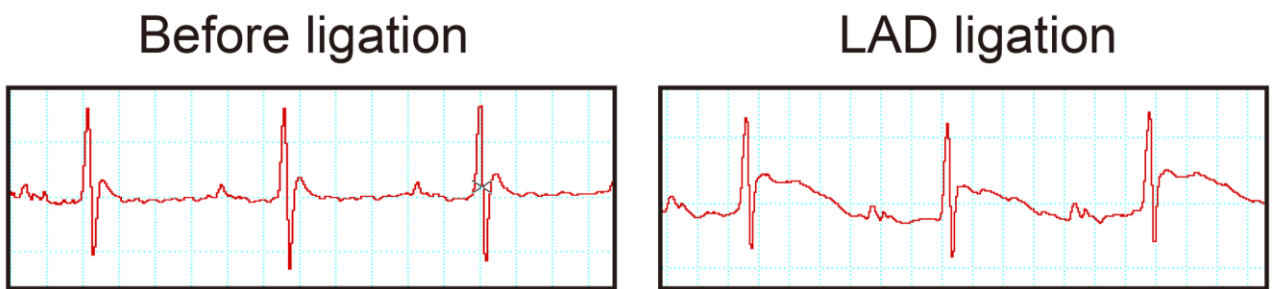
(A) Infection efficiency of various MOI of Ad-SAS transfected into isolated P1 CMs. Scale bar, 500 μ m. (B) Real-time qPCR analysis of Sirt1 AS lncRNA levels in isolated P1 CMs transfected with various MOI of Ad-SAS (n=3 mice per group). (C) CMs in prophase, prometaphase, metaphase, anaphase and cytokinesis in the Sirt1 AS lncRNA overexpression group immunostained for pH3. Scale bar, 30 μ m, (D) Isolated P7 CMs were transfected with Ad-NC or Ad-SAS. mRNA expression levels of CM dedifferentiated markers (RUNX1, c-kit, DAB2) were detected by Real-time qPCR (n=3 mice per group). Statistical significance was calculated using one-way ANOVA followed by LSD post hoc test in B, and two-tailed unpaired Student's t-test in D. * p <0.05, error bars represent mean \pm s.e.m.

Figure S3. Schematic of the MI experiments in adult mice.

A

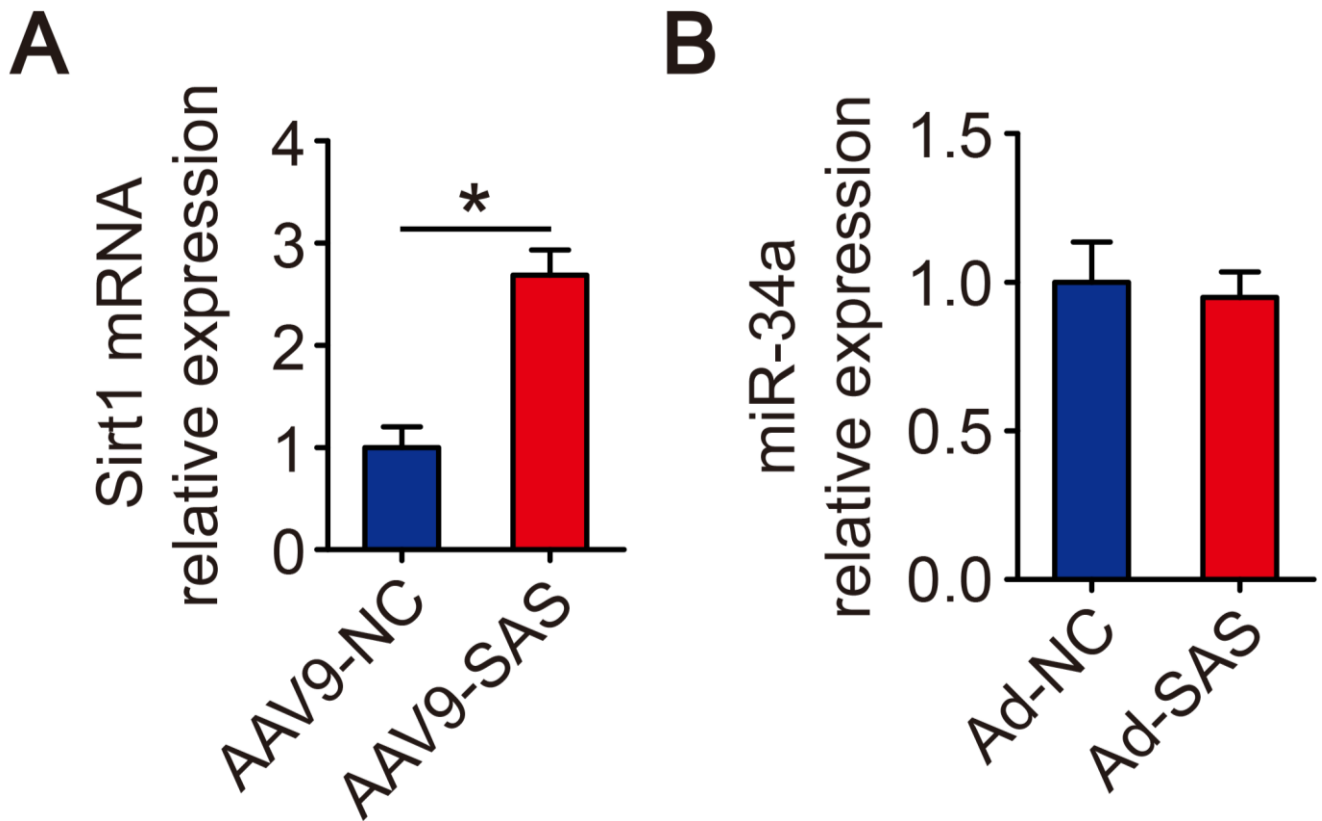


B



(A) Schematic of *in vivo* experiments in adult mice with MI surgery. Echo, echocardiography, IF, immunofluorescence. (B) Elevation of ST-segment from ECG in MI model.

Figure S4. Sirt1 AS lncRNA induces Sirt1 mRNA levels in MI hearts and has no effect on miR-34a expression in CMs.



(A) Real-time qPCR analyses of Sirt1 mRNA levels in AAV9-NC- or AAV9-SAS-injected adult mice hearts 28 days after injection (n=6 mice per group). (B) Real-time qPCR analyses of miR-34a levels in isolated P1 CMs transfected with Ad-NC or Ad-SAS (n=3 mice per group). Statistical significance was calculated using two-tailed unpaired Student's t-test in A-B. * $p < 0.05$; error bars represent mean \pm s.e.m.