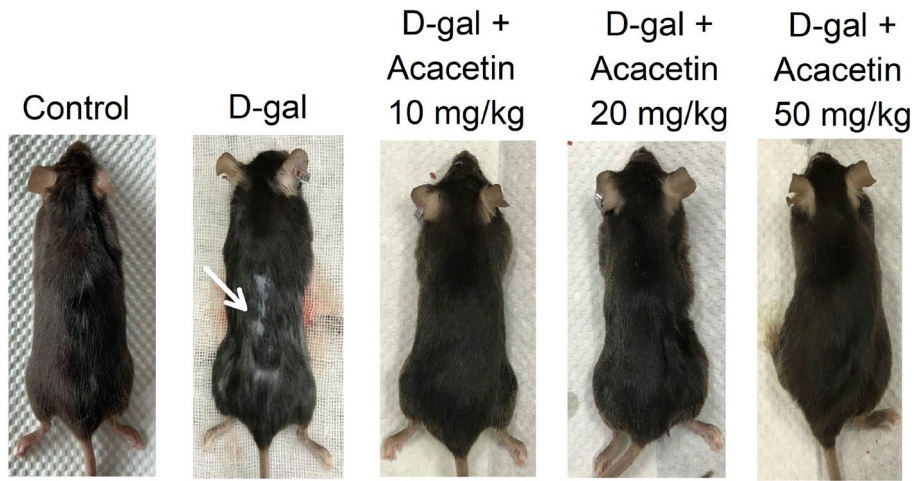
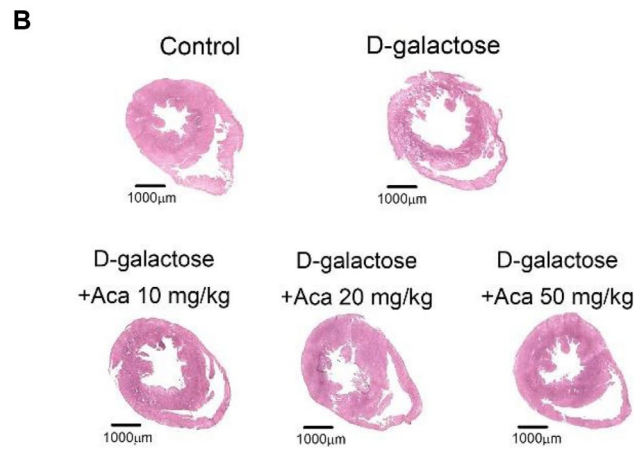
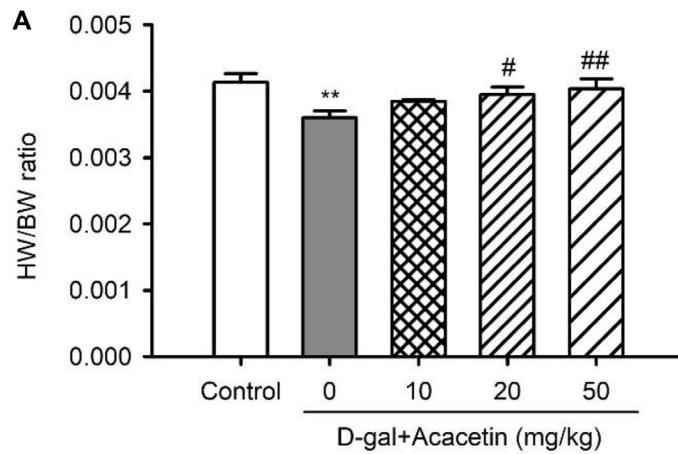


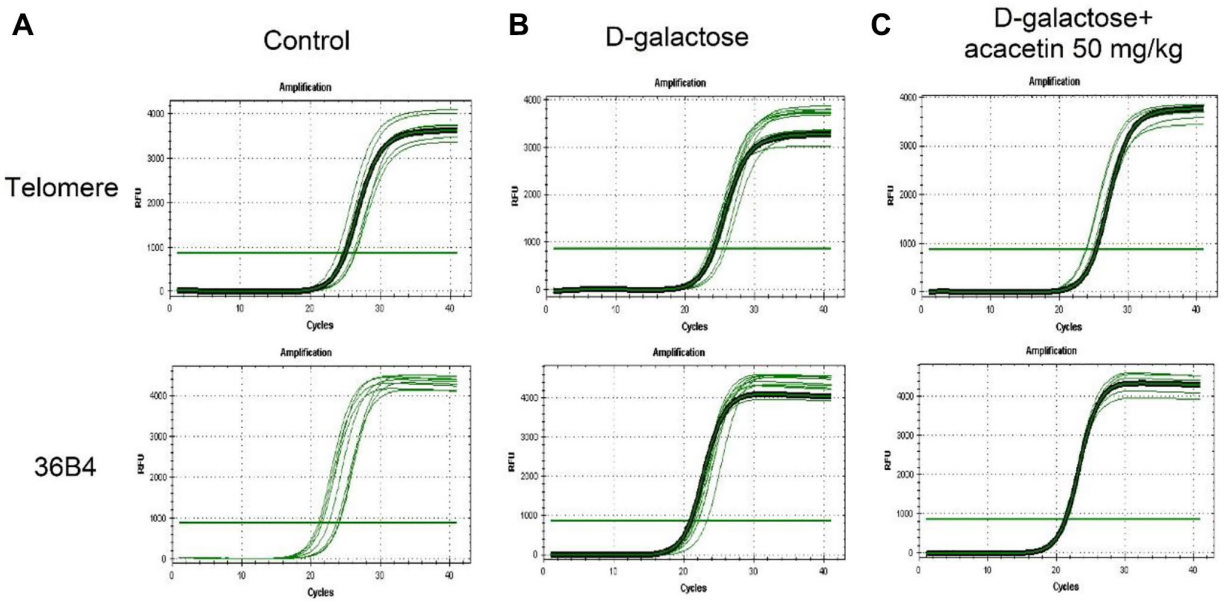
**SUPPLEMENTARY FIGURES**



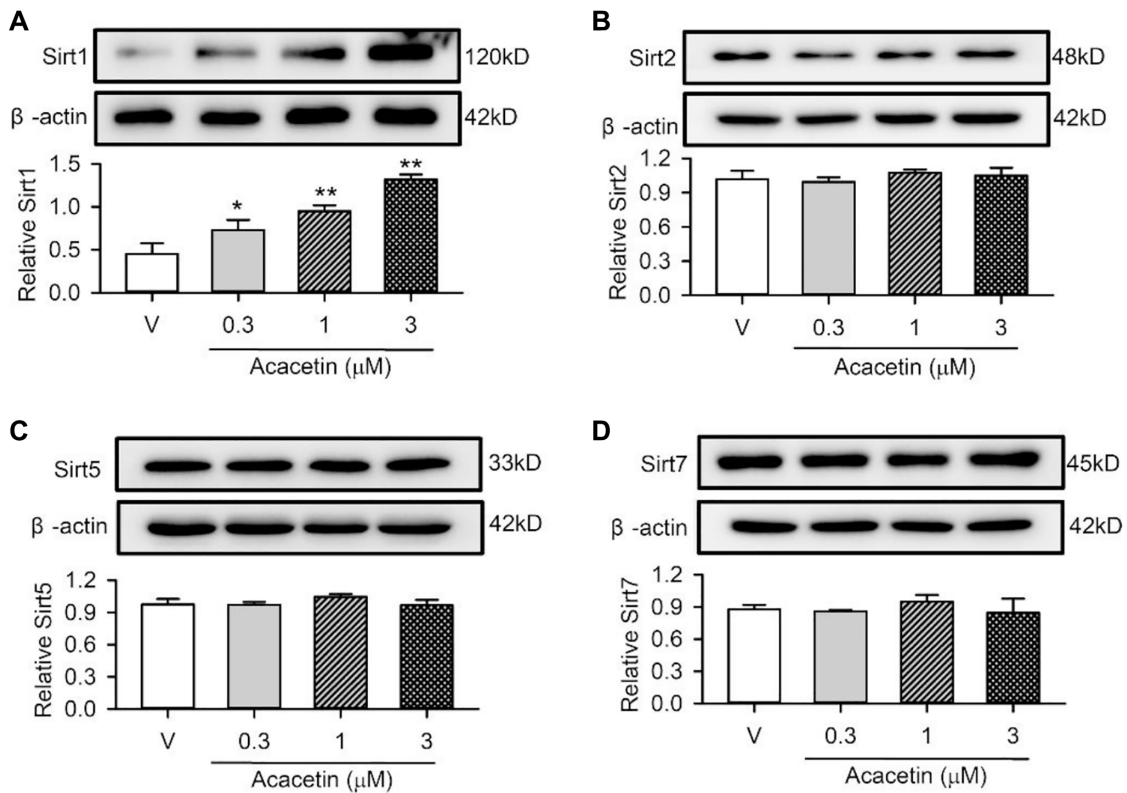
**Supplementary Figure 1.** Back hair loss was observed in D-galactose-induced accelerated aging mice, but not in animals treated with 10, 20 or 50 mg/kg/day acacetin.



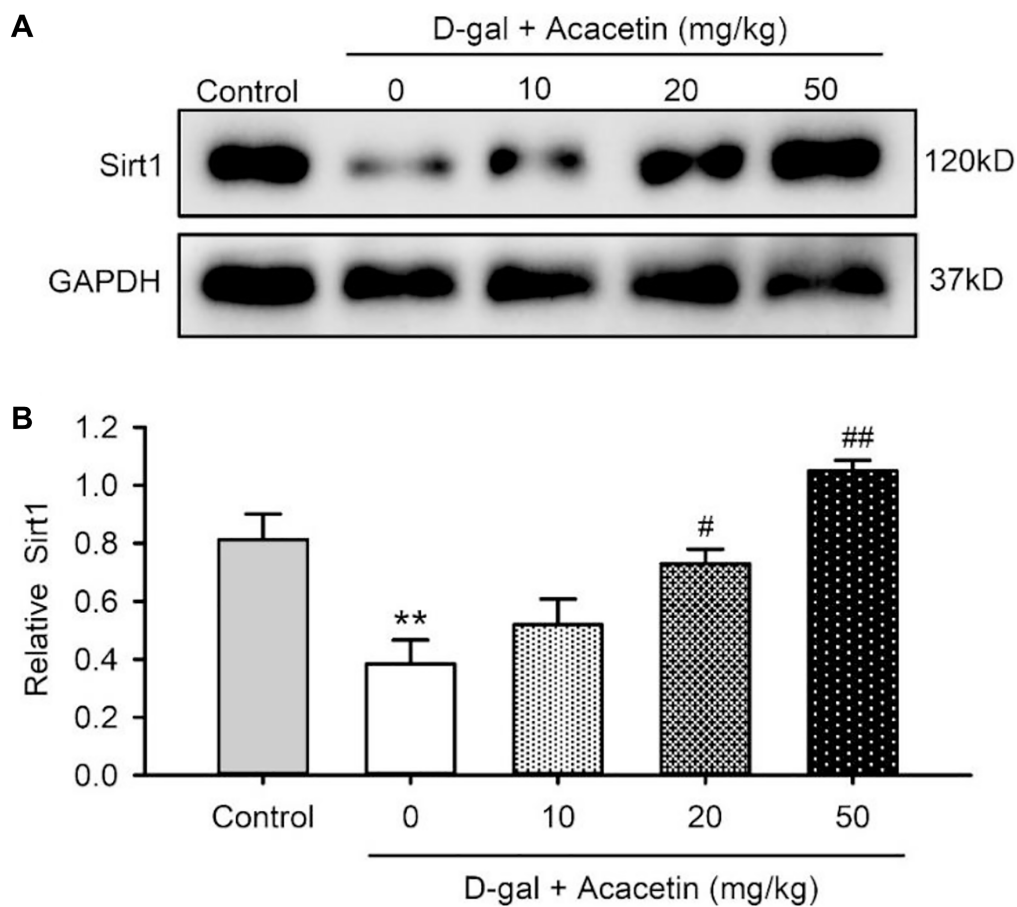
**Supplementary Figure 2.** Effects of acacetin HW/BW ratio and left ventricular wall in D-galactose-induced accelerated aging mice. (A) HW/BW ratio was decreased ( $n = 8$ ,  $P < 0.01$  vs control) by D-galactose and countered by acacetin in a dose-dependent manner ( $n = 7-8$ ,  $^{\#}P < 0.05$ ,  $^{##}P < 0.01$  vs. D-galactose alone). (B) Heart sections from control animal, animal with D-galactose, and animals with D-galactose and acacetin (Aca 10, 20, 50 mg/kg/day). HW, heart weight; BW, body weight.



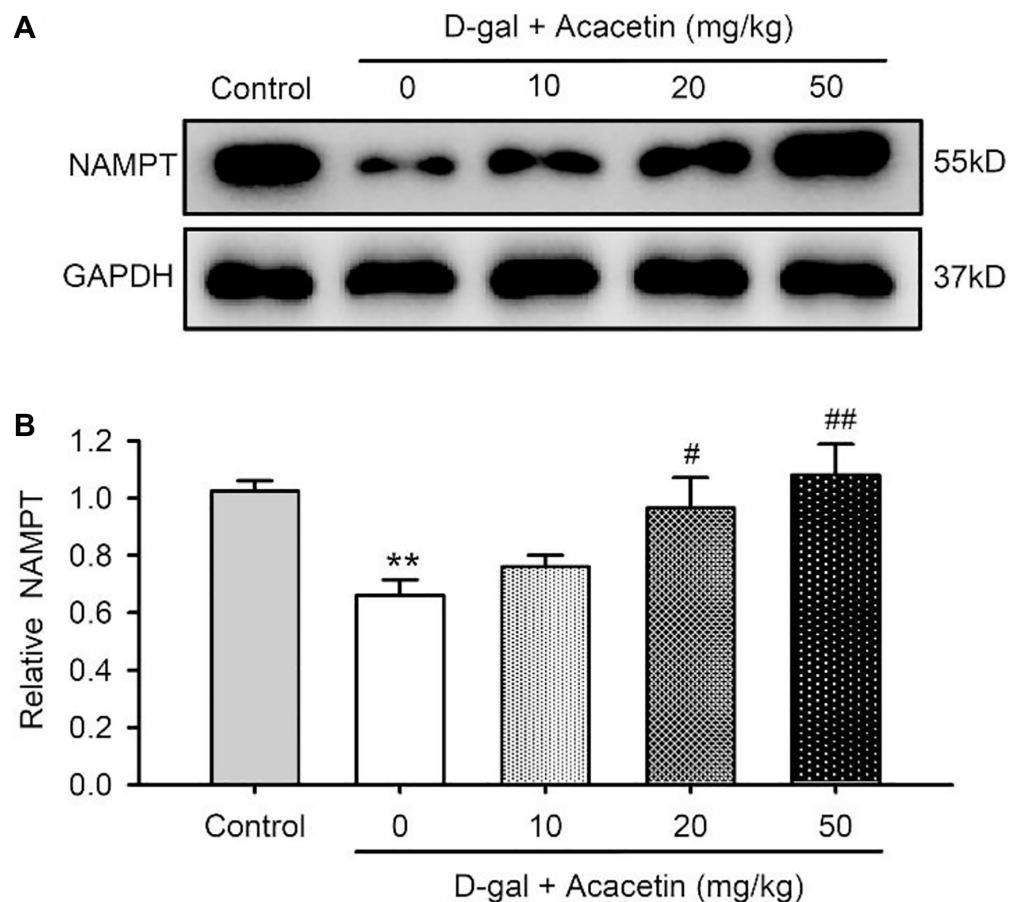
**Supplementary Figure 3.** Original representative qPCR curves of telomere and 36B4, which was used for calculating relative telomere length, determined in ventricular tissues from a control animal, an animal with D-galactose, and an animal with D-galactose and acacetin (50 mg/kg).



**Supplementary Figure 4.** Effects of acacetin on expressions of Sirtuins in H9C2 cardiac cells. (A) Sirt1 expression in the absence (vehicle) and presence of 0.3, 1, and 3  $\mu\text{M}$  acacetin ( $n = 5$ ,  $*P < 0.05$ ,  $**P < 0.01$  vs. control). (B) Sirt2 expression in the absence (vehicle) and presence of 0.3, 1, and 3  $\mu\text{M}$  acacetin ( $n = 4$ ,  $P = \text{NS}$ ). (C) Sirt5 expression in the absence (vehicle) and presence of 0.3, 1, and 3  $\mu\text{M}$  acacetin ( $n = 4$ ,  $P = \text{NS}$ ). (D) Sirt7 expression in the absence (vehicle) and presence of 0.3, 1, and 3  $\mu\text{M}$  acacetin ( $n = 4$ ,  $P = \text{NS}$ ).



**Supplementary Figure 5. Cardiac Sirt1 expression in D-galactose-induced accelerated aging mice without and with acacetin treatment.** (A). Representative western blots of Sirt1 in cardiac tissues from control animals, animals with D-galactose and animals with D-galactose and acacetin (10 mg, 20 mg, or 50 mg/kg/day). (B) Relative Sirt1 levels in cardiac tissues from control animals, animals with D-galactose and animals with D-galactose and acacetin (10 mg, 20 mg, or 50 mg/kg) ( $n = 5$ ,  $**P < 0.01$  vs. control,  $\#P < 0.05$ ,  $##P < 0.01$  vs. D-galactose alone).



**Supplementary Figure 6. Cardiac NAMPT expression from D-galactose-induced accelerated aging mice and acacetin treatment.** (A) Representative western blots of NAMPT in cardiac tissues from control animals, animals with D-galactose and animals with D-galactose and acacetin (10 mg, 20 mg, or 50 mg/kg/day). (B) Relative NAMPT levels in cardiac tissues from control animals, animals with D-galactose and animals with D-galactose and acacetin (10 mg, 20 mg, or 50 mg/kg) ( $n = 5$ , \*\* $P < 0.01$  vs. control, # $P < 0.05$ , ## $P < 0.01$  vs. D-galactose alone).

