## Supplemental Figure Legends

Supplemental Figure 1 Exercise-associated elevation of contractile protein expressions was attenuated by miR-17-3p inhibition. Western blot for contractile proteins including  $\alpha$ -actinin and cardiac Troponin I (cTnI), as well as cytoskeleton protein Desmin. n=3 per group. \*, P<0.05, \*\*, P<0.01, \*\*\*, P<0.001 versus respective control.

## Supplemental Figure 2 miR-17-3p is not sufficient to recapitulate the phenotype observed in exercised heart.

(A) Mice were injected via tail vein with 30 mg/kg agomiR or scramble control for 3 consecutive days and harvested after 2 weeks, which upregulated miR-17-3p expression level in heart at a comparable level to that in exercised heart. n=5 per group.

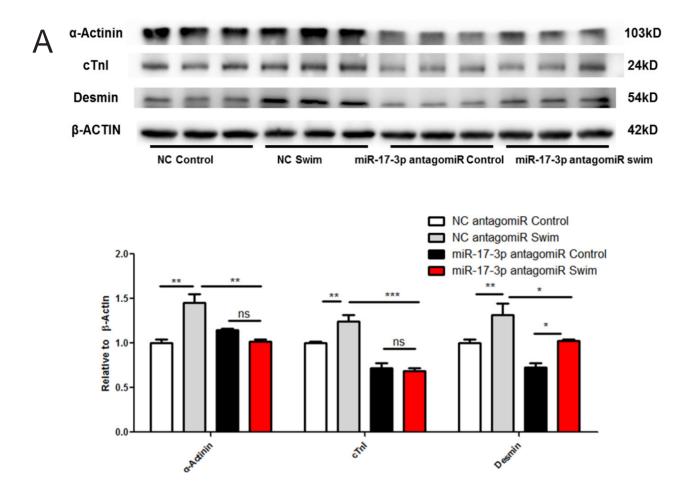
(B) Heart weight/body weight (HW/BW) and heart weight/tibia length (HW/TL) ratios were not altered in mice treated with miR-17-3p agomiR. n=6 per group.

(C) Wheat germ agglutinin (WGA) staining showed that cardiomyocyte area was not modified in mice treated with miR-17-3p agomiR. n=4 per group.

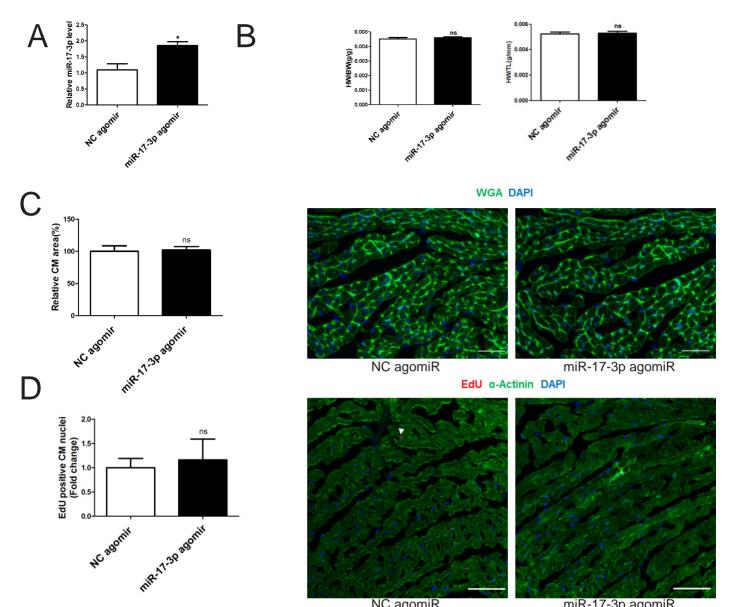
(D) Immunohistochemical staining for  $\alpha$ -actinin and EdU showed no difference in cardiomyocyte proliferation between mice treated with negative control (NC) and miR-17-3p agomiR. n=4 per group.

\*, P<0.05, \*\*, P<0.01, \*\*\*, P<0.001 versus respective control.

## Supplemental Figure 1



## Supplemental Figure 2



NC agomiR

miR-17-3p agomiR