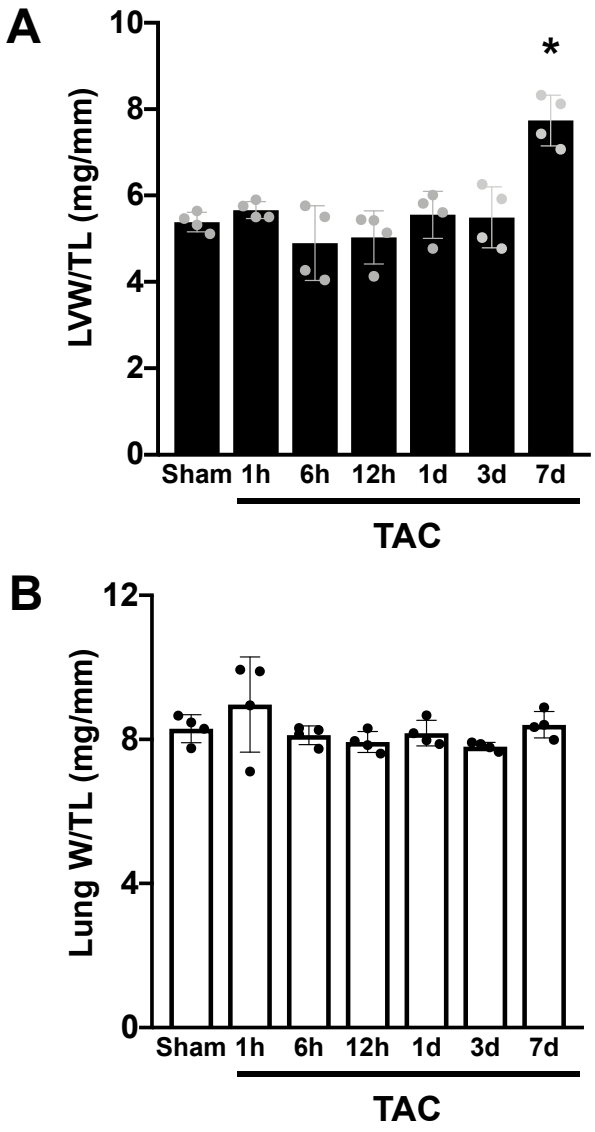
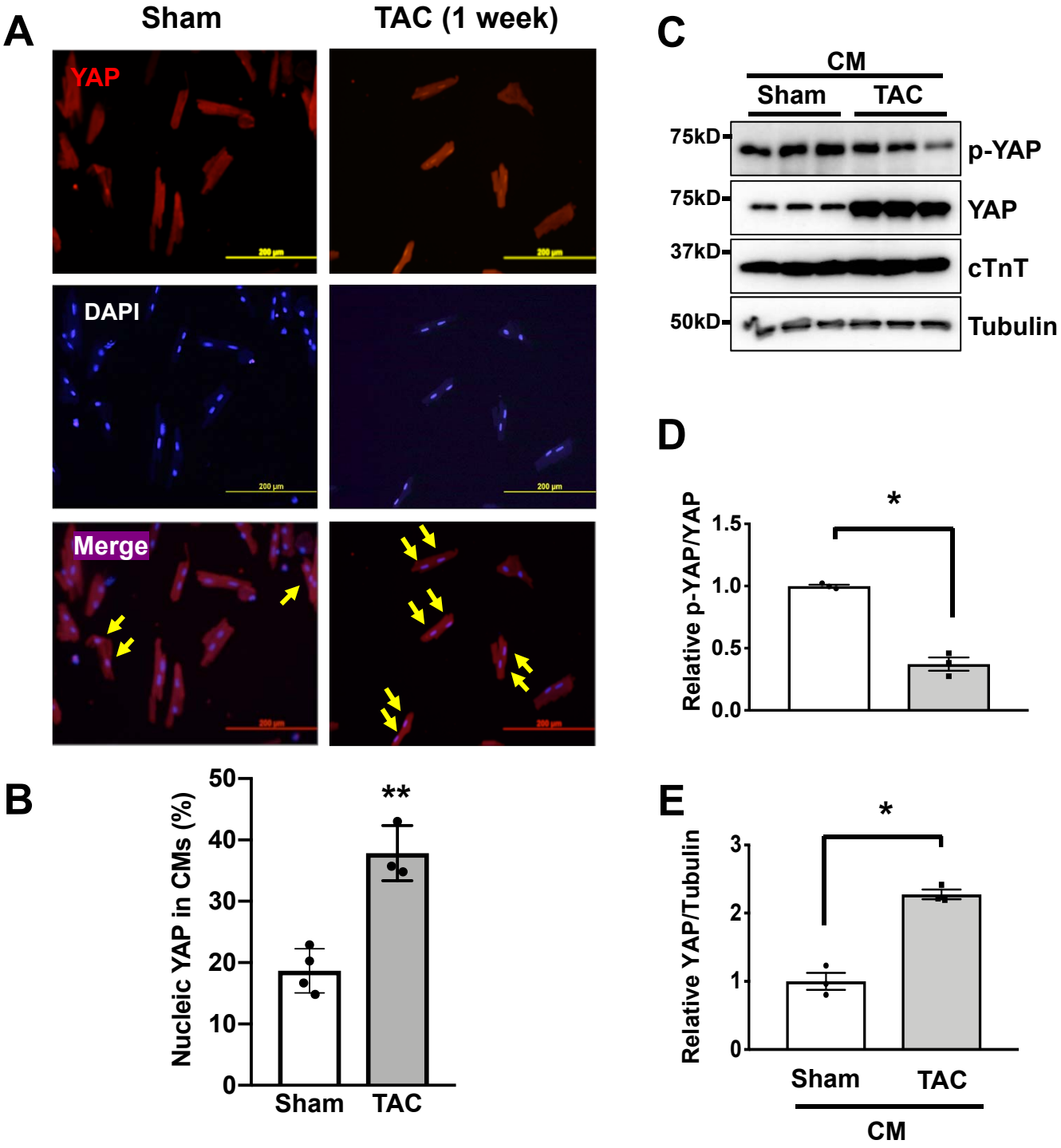
Figure S1



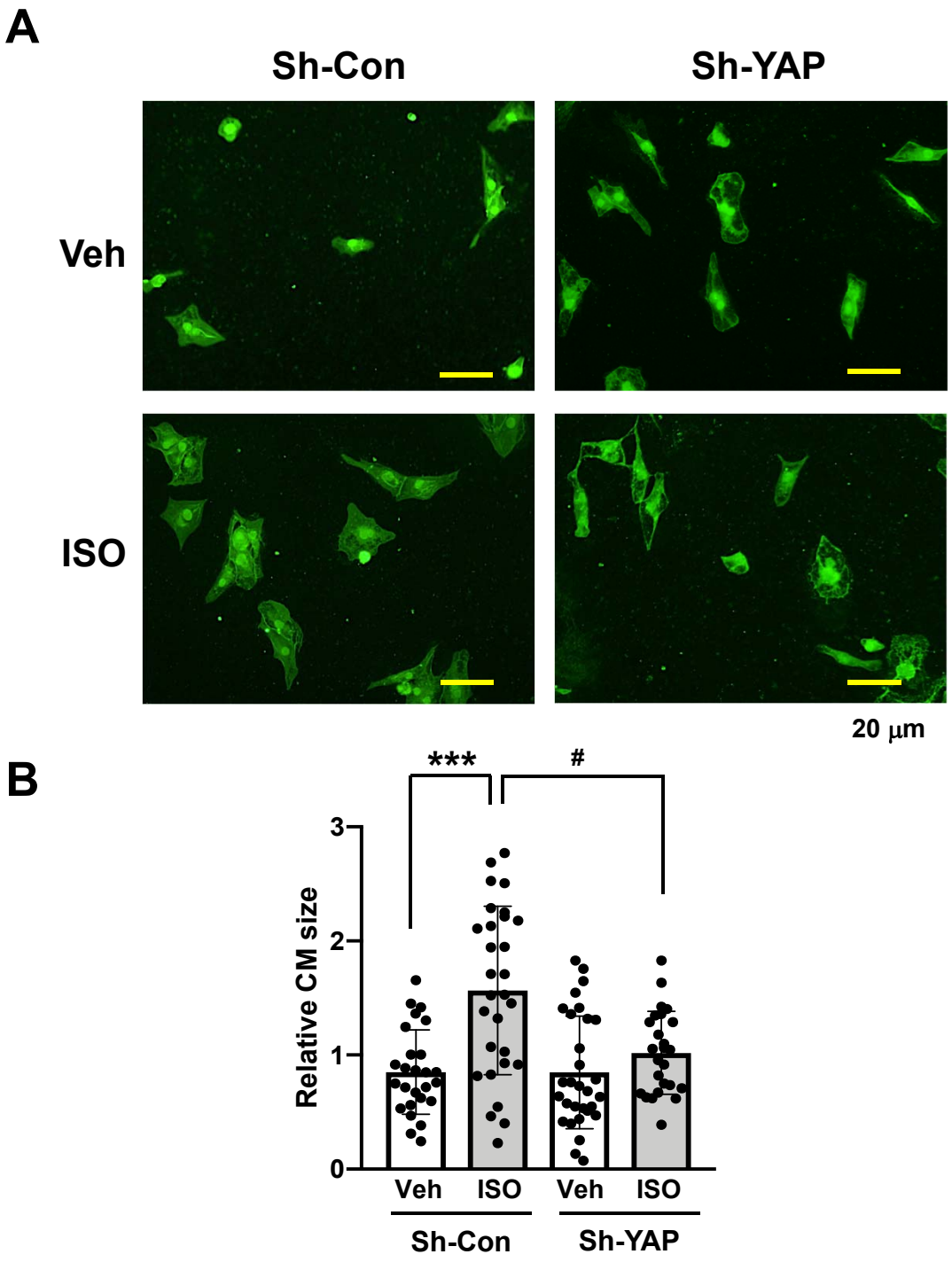
Supporting Information Figure 1. TAC was performed to generate PO for 7 days using wild type mice. Some mice were subjected to sham operation. Hearts and lungs were harvested at the indicated time points (1 hour - 7 days). The left ventricle weight (LVW)/ tibia length (TL) and the lung weight (Lung W)/TL were calculated. Values are means ± SD. *$p < 0.05$ versus Sham-operated mice. $n = 4$. Statistical analyses were conducted with ANOVA. Post-hoc analysis was conducted with Tukey's test.

Figure S2



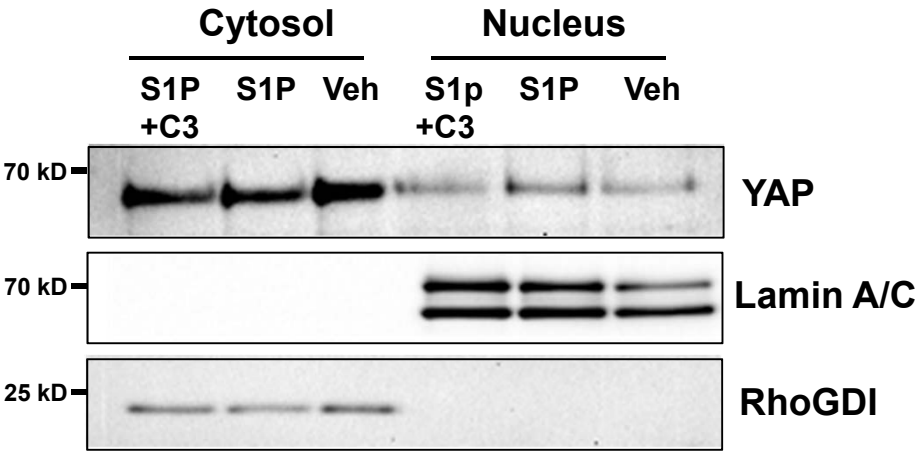
Supporting Information Figure 2. PO induced YAP activation in isolated adult CMs. Adult CMs were isolated from wild type mice 1 week after Sham or TAC surgery. *n* = 3 - 4 independent experiments. (A) Representative images of YAP immunostaining, which was performed using anti-YAP antibody and DAPI staining. Nucleic YAP in CMs is indicated by arrows. (B) Quantification of results from A. (C) Immunoblots detecting p-YAP, total YAP, cTnT and Tubulin in isolated adult CMs. (D and E) Quantification of results obtained from C. Values are mean ± SD. *$p < 0.05$ in comparison to Sham group.

Figure S3



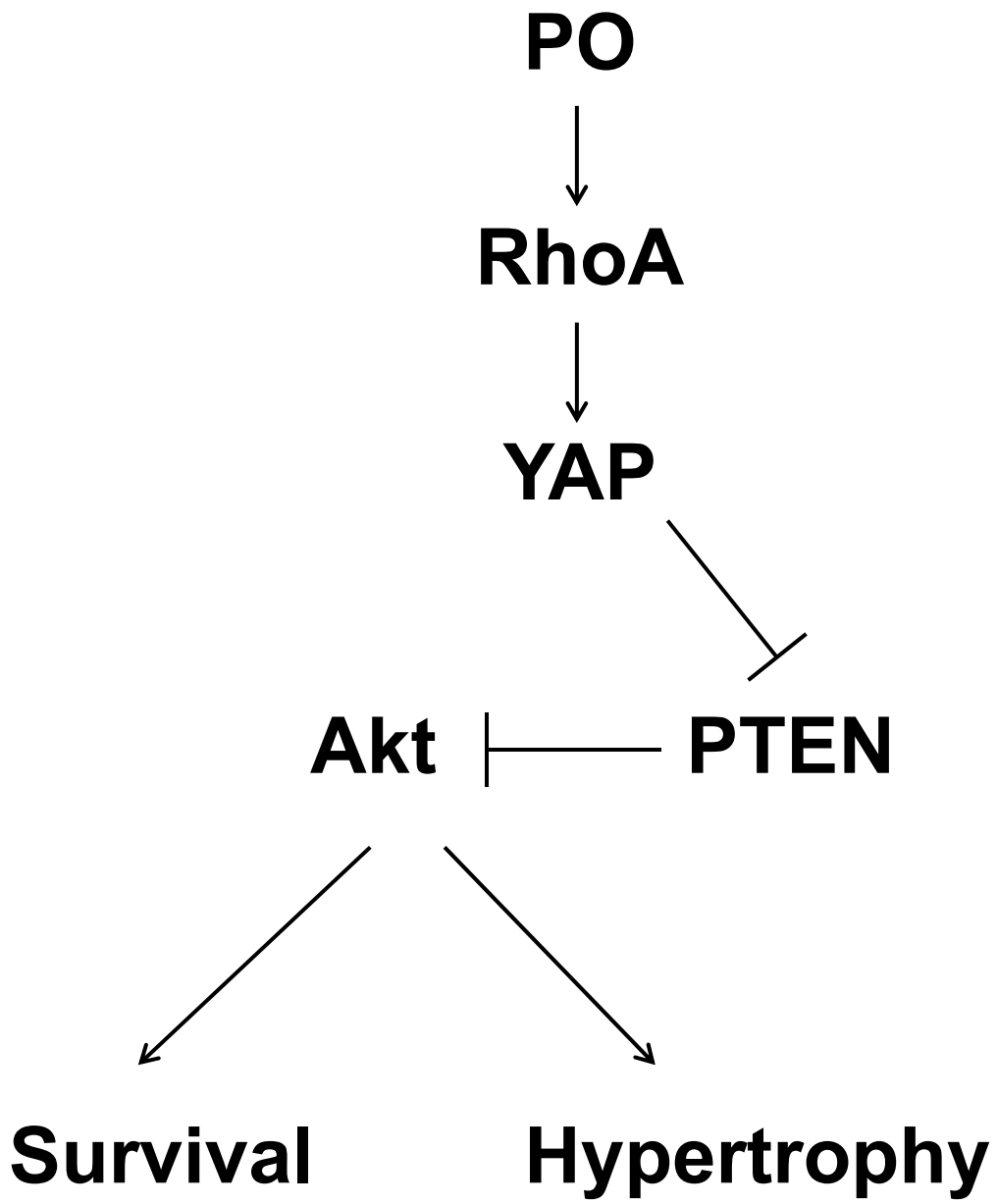
Supporting Information Figure 3. Depletion of YAP attenuates CM hypertrophy. CMs were infected with adenovirus harboring scrambled control (**Sh-Con**) or YAP-targeted short-hairpin (**Sh-YAP**), treated with vehicle (**Veh**) or isoproterenol (**ISO**; 10 μM) and harvested 72 hours later. CMs were stained with wheat germ agglutinin. **A,** Representative data. **B,** Quantitative analyses of A. The data are expressed as ratios relative to the mean value of the Sh-Con+Veh CMs. Values are means ± SD. ***p< 0.0005, versus Sh-Con + Veh CMs. #p < 0.05 versus Sh-Con + ISO CMs. n = 26 - 32. Values are means ± SD . Statistical analyses were conducted with ANOVA. Post-hoc analysis was conducted with Tukey's test. Scale bar; 20 μm.

Figure S4



Supporting Information Figure 4. Neonatal rat cardiomyocytes (CMs) were treated with vehicle (veh), S1P (Sphingosine-1-phosphate), or S1P and C3 exoenzyme. Nuclear and cytosolic fractions were isolated by subcellular fractionation and then immunoblotted with anti-YAP antibody. RhoGDI and Lamin A/C are markers for cytosolic and nuclear fractions, respectively. Experiments are repeated 4 times.

Figure S5



Supporting Information Figure 5. Schematic model of RhoA, YAP and Akt interaction in the regulation of CM hypertrophy and survival in the heart in response to PO.