

## Supplementary Material

### Results

With respect to hemodynamics, the 32 °C group showed generally favorable results at reperfusion (immediately before balloon deflation after undergoing 60 minutes of LAD occlusion with overlapping 30 minutes of cooling) compared to normothermia. Mean arterial pressure and rate-pressure product (typically used as marker for myocardial energy expenditure) showed slight but significant reduction of 17% and 4% (32 °C vs 38 °C,  $P = 0.046$  and  $0.019$ , respectively, Suppl. Figure 1A and 1D). At reperfusion, heart rate (HR) was slightly elevated in the 35 °C group and slightly lower in the 32 °C group but differences were not statistically significant (ANOVA  $P = 0.052$ , Suppl. Figure 1B). At reperfusion,  $dP/dt_{max}$  (marker of cardiac contractility) was similar in all groups (ANOVA  $P = 0.657$ , Suppl. Figure 1C).  $CO_2$  production at reperfusion showed significant reduction in the hypothermia groups compared to the control group (38 °C vs 35 °C or 32 °C,  $P < 0.001$ , Suppl. Figure 1E).

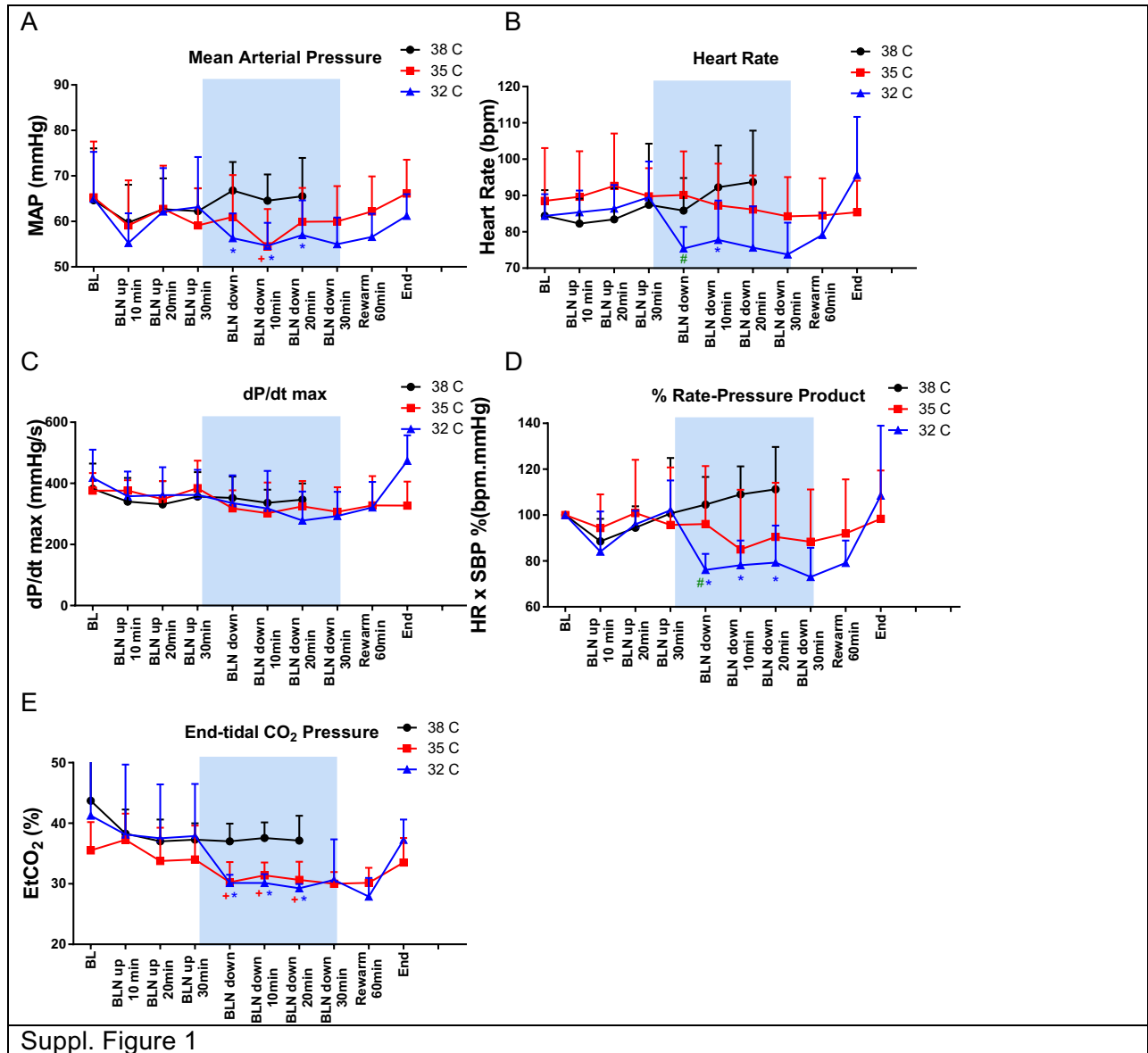
Baseline changes in LV cardiac function parameters (end-diastolic volume [EDV], end-systolic volume [ESV], stroke volume [SV], heart rate [HR] and ejection fraction [EF]) at day 6 showed a non-significant trend of reduced adverse remodeling in the hypothermia groups relative to baseline day 0 (Suppl. Figure 2). Cardiac output change ( $\Delta CO$ ) at day 6 was only preserved in the 32 °C group (38 °C vs 32 °C,  $P = 0.041$ ).

## Figure Legends

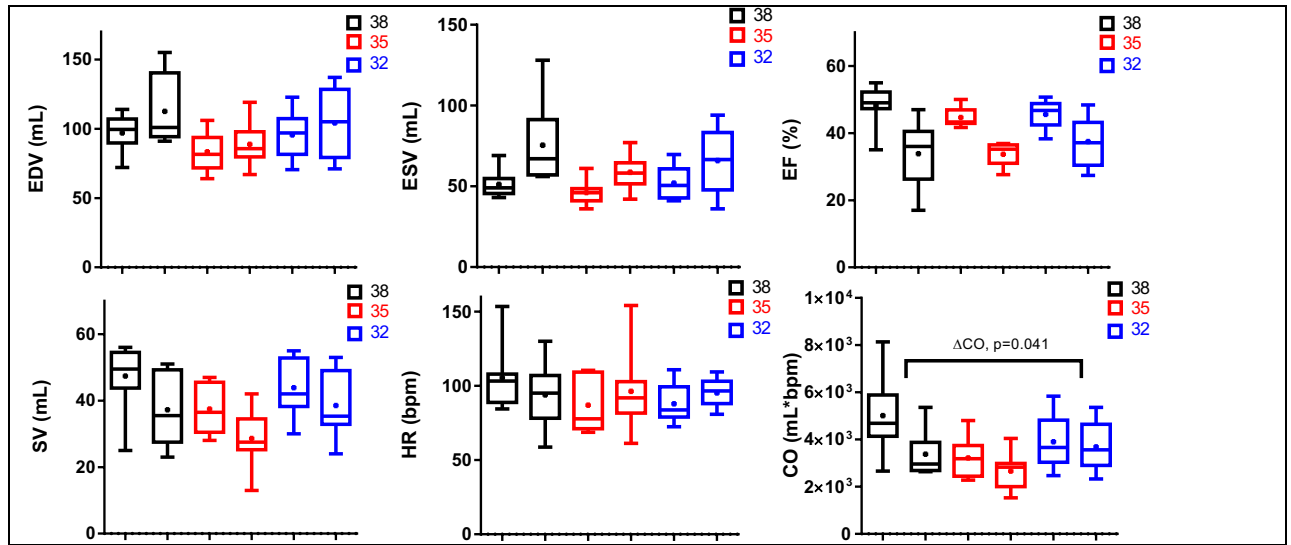
Suppl. Figure 1 – Hemodynamic parameters during ischemia/reperfusion. Physiological and hemodynamic parameters profiled over the duration of occlusion, cooling, reperfusion and rewarming. A favorable effect of hypothermia was observed on pre-reperfusion changes in mean arterial pressures, rate-pressure product and heart rate which persisted until 1 hour post reperfusion. Error bars show mean and standard deviation. BLN, balloon; BL, baseline; dP/dtmax, maximal rate of systolic pressure rise; MAP, mean arterial pressure; HR, heart rate; \* indicated 32 °C vs 38 °C  $P < 0.05$ , + indicates 35 °C vs 38 °C  $P < 0.05$ , # indicates 32 °C vs 35 °C  $P < 0.05$ . Blue background is hypothermia window in cooling groups.

Suppl. Figure 2 – Cardiac LV function assessment using CMR at baseline and follow up. Pairs of day 0 and day 6 box plots of end-diastolic volume, end-systolic volume and ejection fraction show a trend of reduced deterioration in the hypothermia groups. While heart rate was similar between groups, cardiac output change was preserved in the mild 32 °C hypothermia group ( $P < 0.05$ ).

# Figures



Suppl. Figure 1



Suppl. Figure 2