**Supplementary Methods**

*MI model.* Male mice (9-16 weeks old) were anesthetized, intubated and actively ventilated (typically, respiration rate 133/min; tidal vol 200 μL). The thoracic cavity was accessed through the left, third intercostal space and the pericardium was resected to visualize the LCA. A ligature of 7-0 silk suture was placed around the LCA and a short segment of P.E. tubing at the edge of the left atrium, and tightened to fully occlude arterial flow as verified by ischemic change in coloration of the anterior wall and EKG tracings (ST-segment elevation). Following 30 min of ischemia, re-perfusion was initiated by removal of the tubing (the suture was left in place). Following closure of the chest, pneumothorax was resolved by blunt needle aspiration. Mice were given saline IP (0.5 mL/25 g body weight) and were recovered under temperature support. Following 24 hr re-perfusion, surviving mice were anesthetized, the chest was opened and a catheter was inserted into the transverse aorta. The right atrium was opened and 0.5 mL of saline was administered through the aortic cannula to exsanguinate the heart. The LCA was then occluded with the in-dwelling suture and 0.2 mL of Evans blue (2% w/v) was injected into the LCA and RCA via the ascending aorta before the heart was extracted. The isolated heart was then frozen and sliced into segments 1 mm thick, and slices were placed in 1% TTC in saline at 37 deg C for 20 min. TTC-stained slices were fixed in 10% formalin for 20 min before photographic documentation. Images were analyzed with Image Pro Plus to evaluate area of recovery, area-at-risk and area of necrosi

*Coronary angiography.* Mice (male and female, 4-20 months old) were anesthetized, the chest was opened and a catheter was inserted into the transverse aorta. 0.5 mL of saline was administered through the aortic cannula to exsanguinate the heart. Batson's #17 anatomical corrosion solution (Polysciences, Inc., Warrington, PA, USA) was injected into the LCA and RCA via the ascending aorta, and the heart was extracted after the corrosion solution had completely

set. The isolated heart was incubated in 1% (W/V) of Terg-A-Zyme (Alconox Inc., New York, NY, USA) at room temperature for 1 week to make optimize visualization of the coronary arteries.