

Protection of the myocardium against ischemia/reperfusion injury by angiotensin-(1-9) through an AT2R and Akt-dependent mechanism

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© 2018 Elsevier Ltd Angiotensin-(1-9), a peptide of the non-classical renin angiotensin system, has been shown to prevent and revert hypertension and cardiac hypertrophy. We hypothesized that systemic delivery of angiotensin-(1-9) following myocardial infarction will also be protective and extend to provide protection during reperfusion of the ischemic heart. Adult Sprague Dawley rats were subjected to left anterior descending artery ligation and treated with angiotensin-(1-9) via osmotic mini-pump for 2 weeks in the presence or absence of Mas receptor or AT2R antagonists (A779 and PD123319, respectively). Myocardial death and left ventricular function were evaluated after infarction. Infarct size and functional parameters were determined in isolated rat hearts after global ischemia/reperfusion in the presence of angiotensin-(1-9) plus receptor antagonists or Akt inhibitor at reperfusion. *in vitro*, neonatal rat ventricular cardiomyocytes underwent simulated ischemia/reperfusion and angi