



Prospective cardioprotective effect of octreotide in isoproterenol-induced myocardial infarction in rats

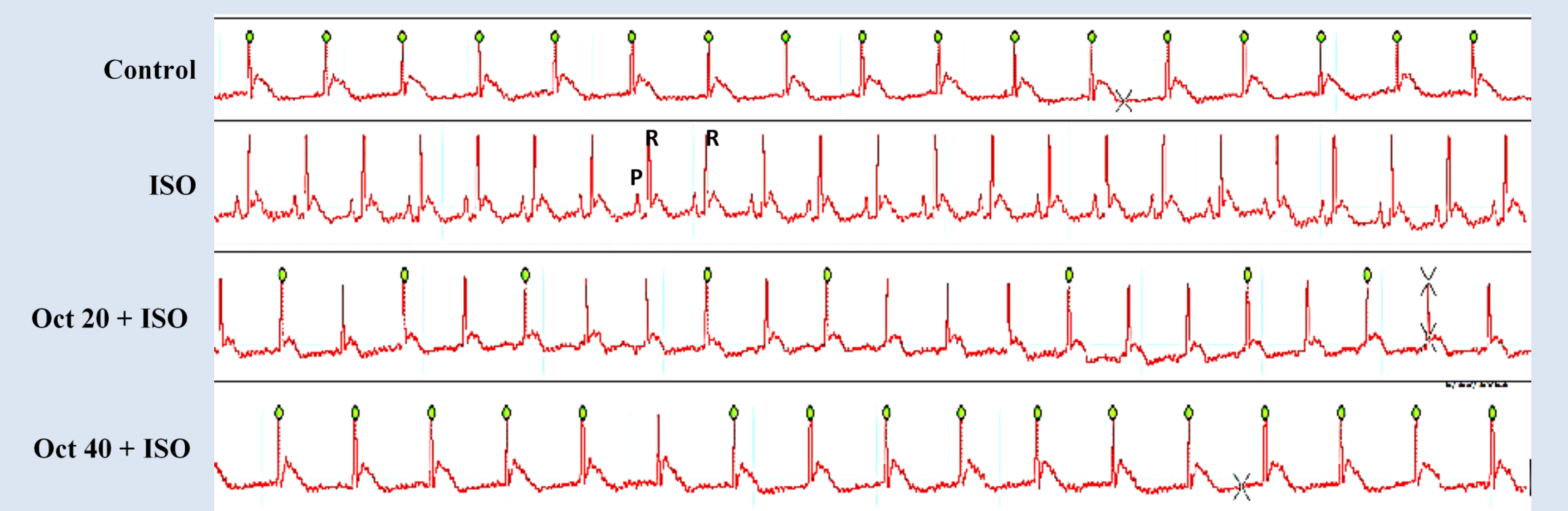
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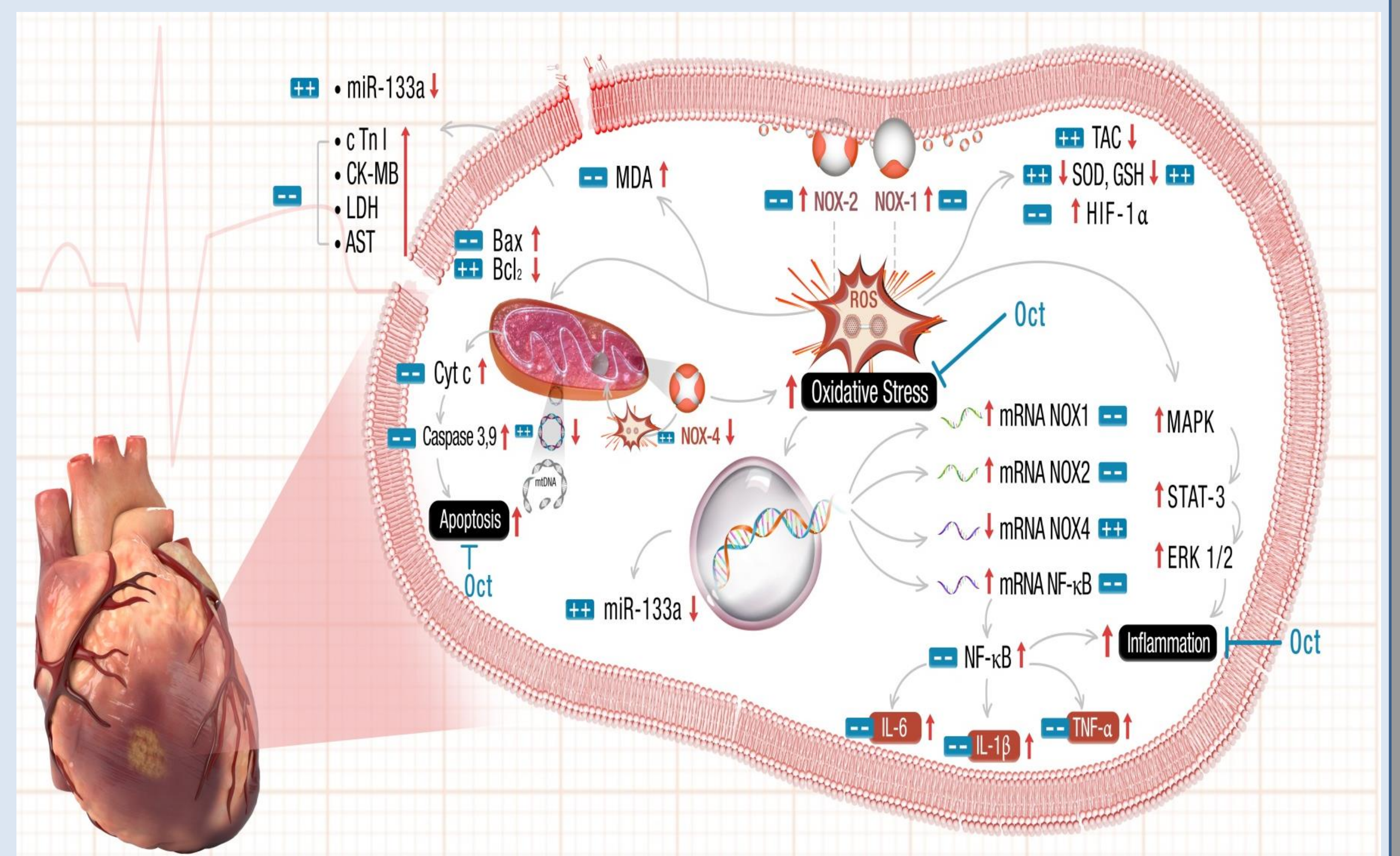
Introduction

Myocardial infarction (MI) is a global health care problem, which instigates irreversible cardiac tissue damage and sudden death, necessitating new prevention and management strategies. Hence, The current study is designed to investigate the cardioprotective effect of two different doses of octreotide on ISO-induced MI in rats with tackling the possible underlying trajectories involved including miR-133a, HIF-1 α , NOX-1/-2/-4, mitochondrial morphology, cardiac mtDNA copy number, and the inflammatory p38-MAPK/Erk1/2/STAT3/NF- κ B pathway.

Results

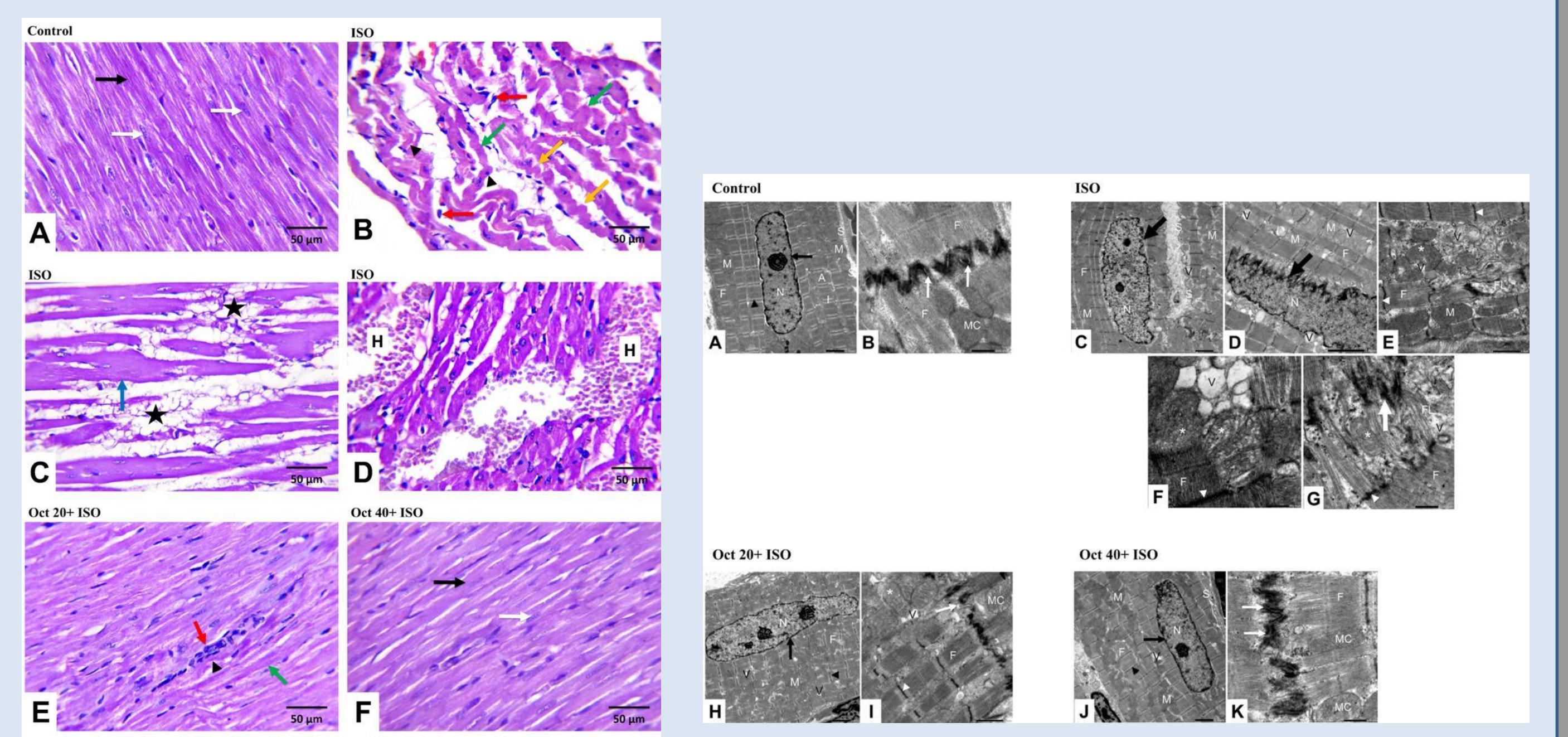
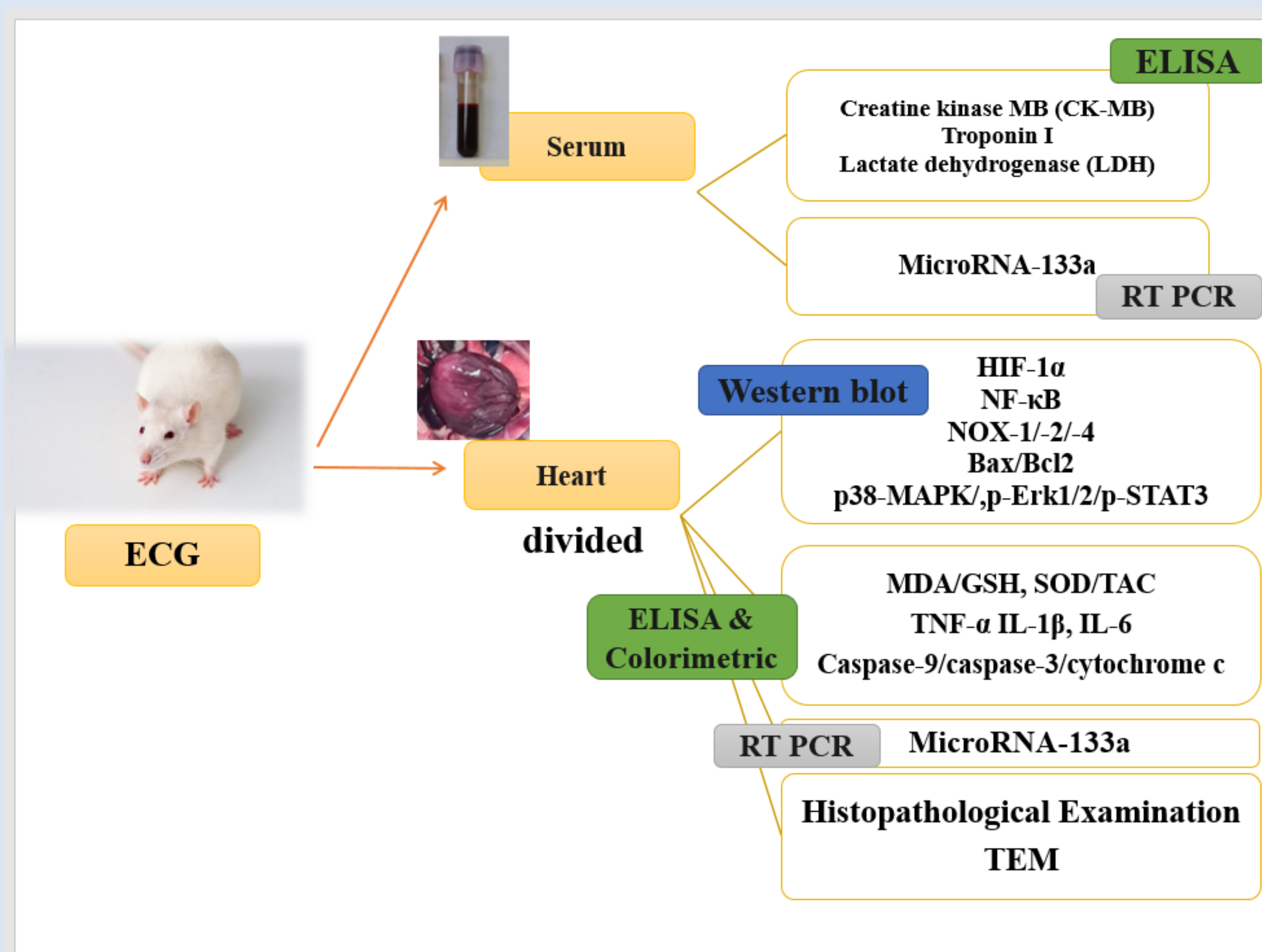
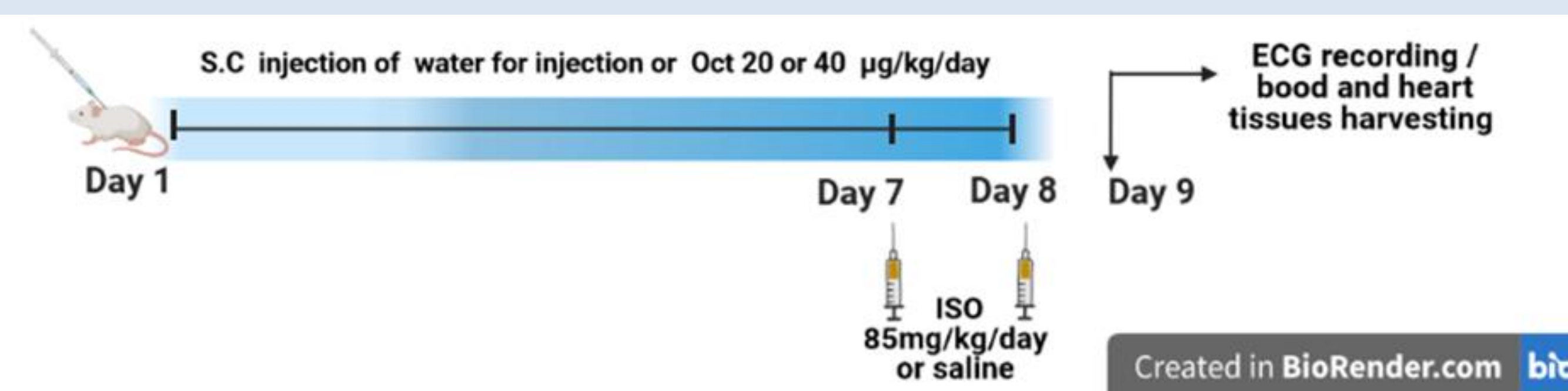


Effect of octreotide on electrocardiographic (ECG) pattern in myocardial infarcted rats



Graphical visualization showing the molecular changes in the cardiomyocyte during myocardial infarction and effect of octreotide on different measured parameters .

Materials and Methods



Representative photomicrograph demonstrating the histopathological changes of cardiac tissues in different groups (H&E, \times 400). Representative electron photomicrographs demonstrate the ultrastructural morphology of myocardium in different groups

Conclusions

Octreotide possesses promising cardioprotective capabilities against deleterious injuries induced by MI due to its antioxidant, anti-inflammatory, and antiapoptotic properties. Octreotide dose dependently modulated extremely vital molecular targets, which extensively participate in the MI associated injuries including the NOX-1/-2/-4, mitochondrial morphology, cardiac mtDNA copy number, and MAPK/Erk1/2/STAT3/NF κ B pathway.

References

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- D'Oria, R., Schipani, R., Leonardini, A., Natalicchio, A., Perrini, S., Cignarelli, A., Laviola, L., Giorgino, F., 2020. The Role of Oxidative Stress in Cardiac Disease: From Physiological Response to Injury Factor. *Oxid Med Cell Longev* 2020, 5732956.