The aim of the present investigation is to determine the effect of melatonin on isoproterenol-induced myocardial ischemia in rat heart and to elucidate its possible underlying mechanism with the view to find out whether melatonin can be used as a future cardioprotective agent against myocardial ischemia.

**OBJECTIVE(S)**

The specific objectives of the proposed investigation are:-

1. To induce myocardial ischemia in rats by the administration of isoproterenol and study the changes brought about, if any, in the cytoarchitectural, biochemical and functional parameters of the heart, and, to study the possible underlying mechanisms.

2. To study the effect of melatonin administration against isoproterenol-induced myocardial ischemia, to determine whether it plays any protective role.

3. To study the mechanisms underlying such protection, if any.

4. To suggest a minimum effective dose of isoproterenol for inducing myocardial ischemia, and, a minimum effective dose of melatonin for providing protection against isoproterenol-induced myocardial injury in rats.