hypothesis & objectives
HYPOTHESIS AND OBJECTIVES

It is evident from the information presented above that quite a few medicinal plants have been studied in some detail for their antiischemic activity while there are very limited studies on others although there are indications either from Ayurvedic & Unani systems of medicine or from preliminary studies published. Our knowledge on the usefulness of medicinal plants will increase if detailed studies are carried out with some plants, which have not been subjected to detailed investigation. The aim of the present study has been to screen one such plant about which there is no scientific confirmation of the claim for its antiischemic activity. Therefore, *Acalypha indica* has been chosen for screening. Flavonoids have been acknowledged for their unique antioxidant properties, and possess multifaceted activities that may be relevant to heart ischemia. Recently, flavonoids have been reported from the flowers and leaves of *A.indica*. Moreover, no reports are available about the constituent(s) of *A.indica* which is responsible for the activity against MI.

With this background and with the additional knowledge that flavonoids from the *Acalypha indica* may influence ischemia associated complications largely related to oxidative stress induced alterations in cellular pathways. Cellular pathways are mostly regulated by oxidation-reduction changes in the redox sensitive sites of critical structural and biological proteins. We hypothesized that “flavonoids from *A.indica* may exert its protective effects against the isoproterenol induced MI”.

The objectives of this thesis are to:

* Investigate the effects of flavonoid rich *Acalpha indica* leaf extract (AIE) on blood glucose and hypertrophic index in ISO induced myocardial ischemic rats.
* Evaluate the protective effects of flavonoid rich AIE on plasma and myocardial lipids against ISO in rats.
Hypothesis and Objectives

Investigate the antiischemic effects of the flavonoid rich fraction of *Acalpha indica* in rat model of MI through assays of cardiac injury and ischemic markers.

Investigate the protective effects of flavonoid rich fraction of AIE on heart of experimental myocardial ischemic rats with special reference to lipid peroxidation and antioxidant milieu.

Evaluate the effect of the flavonoid rich bioactive(s) fraction of *Acalpha indica* on histopathological alterations in animals with experimental MI.

It is expected that this study could provide a scientific basis for the use of this plant for the development of drug leads that ameliorate the complications of MI.