

CHAPTER 2

SCOPE AND OBJECTIVES

Herbal medicines are the major remedy in traditional medicinal system and are they used in medicinal practice for thousands of years. The practice continues even today because of the biomedical benefits in many parts of the world. There is phenomenal increase in the demand for the herbal medicines especially for those, which have been scientifically validated. The alarming rapid rate of species extinction, which are being currently witnessed due in part to habitat destruction lends certain urgency to the quest for plant derived drugs. Natural product research continues to be an important part of the drug discovery process. The main advantage of natural products as a source of lead compounds is the tremendous molecular diversity found in nature.

During the last two decades, there has been a growing interest in studies that concern with prevention of uncontrolled oxidative process leading to various diseases in living system. Several studies have shown the role of oxidative stress is the causation and progression of various diseases including hepatotoxicity, carcinogenesis, diabetes, wounds and various other pathological effects.

Most of the well-known plants have many hidden claims within them, taking this as a basis for this work and after an extensive survey of some commonly available medicinal plants, it is observed that *Limonia acidissima* Linn, Family Rutaceae, a popular Indian tree which also has the

above said medicinal claims, was selected for the current research work. It was planned to carry out the separation of phytochemical constituents, their pharmacological effects and its therapeutic utility which are concerned with the fruit pulp of indigenous medicinal plant, *Limonia acidissima*.

Hence the aim and objectives of the present study is to evaluate the extract for hepato protective, anti-diabetic, wound healing, anti-cancer and associated anti-oxidant activity as well as to perform activity-guided separation of phytoconstituents from fruit pulp of *Limonia acidissima* (Rutaceae).

The main objectives of the study were,

- To establish the therapeutic effect of Fruit pulp of methanolic extract of *Limonia acidissima*.
- To identify the various phytochemical constituents of methanolic extract of *Limonia acidissima* extract.
- To screen various pharmacological activities of the methanolic extract on experimental animals.
- To isolate the phytoconstituents present in the methanolic extract.
- To confirm the structure of the phytoconstituents isolated using various spectral analysis like IR, ¹HNMR, ¹³CNMR and MS.
- To screen invitro antioxidant and cytotoxic activities of the isolated phytoconstituents.