ABSTRACT

Drugs of natural origin play a vital role in public health care system and hence there has always been a keen interest in the use of drugs with minimal side effects. As flavonoids and isoflavonoids are reported to possess varied biological activities, introducing these into modern medicine might be a valuable alternative as the therapeutic efficacy of isoflavonoids is quite proven one. *Dalbergia* species are known to be rich sources of flavonoids and we have chosen two *Dalbergia* species namely *Dalbergia rubiginosa* Roxb and *Dalbergia malabarica* Prain for detailed pharmacognostical, phytochemical and pharmacological studies.

The introductory chapter presents the study on herbs as medicine, various bioactivities of flavonoids, phytoconstituents isolated from *Dalbergia* species and review of past literatures. This is followed by Chapter II which deals with the pharmacognostical studies of both the *Dalbergia* species taken up for our study. The parameters considered in standardization of these herbal drugs include plant morphology, anatomical studies, histochemical studies, powder characteristics, quantitative microscopy, analytical parameters, preliminary phytochemical screening and fluorescence analysis.

The Chapter III is devoted to the isolation and characterization of the polyphenolic phytoconstituents from the species of *D. rubiginosa* and *D. malabarica*. In this chapter, the details of isolation of seven compounds from the extracts of leaves and roots of *D. rubiginosa* and *D. malabarica* and characterization of these by chemical and spectral methods like UV, IR, $^1$H NMR, $^{13}$C NMR and MS have been given.
Chapter IV deals with the pharmacological studies carried out with the crude extracts of *D. rubiginosa* and *D. malabarica*. These extracts have been subjected to investigations such as antioxidant, antilithiatic, antifibrotic, hepatoprotective, antidiabetic, diuretic, anti-inflammatory, antipyretic and analgesic activity and the results obtained have been subjected to Newman keul’s multiple range test for statistical significance.

In Chapter V, out of the few compounds isolated from the roots and leaves of *D. rubiginosa* and *D. malabarica*, an isoflavone namely 5,7-dihydroxy-2’,3’,5’,6’-tetramethoxy isoflavone isolated and characterized from the benzene extract of the leaves of *D. rubiginosa* has been subjected to various pharmacological studies and the observations were subjected to stringent statistical analysis.

The present study provided further scope of detailed investigations on the mechanism of action of the individual components obtained from the species of our interest. This research work has been carried out painstakingly considering all aspects of study with a holistic approach that includes areas such as pharmacognostical, phytochemical and pharmacological investigations and it is expected that this would be a stepping stone in incorporating *D. rubiginosa* and *D. malabarica* in the arena of herbal medicine.