CHAPTER - II

SCOPE AND OBJECTIVE OF THE PRESENT WORK

The present investigation is concerned with the widely distributed indigenous medicinal plants *Momordica dioica* Roxb and *Azadirachta indica* A. Juss. From the survey of literature of these plants, it is observed that these plants are well known in traditional medicine practices. In order to do a systematic study on a lead molecule discovery and optimisation, we have gone in for a treatment of a set of ailments by diverse plants species from different family.

*Momordica dioica* belongs to the family of Cucurbitaceae and other *Momordica* species that includes *Momordica balsamina* Linn, *Momordica charantia* Linn, *Momordica cochinchinesis* Spreng, *Momordica tuberosa* Cogn, *Momordica umbellata* Roxb were reported to possess antidiabetic activity. Among all the species *Momordica charantia* Linn is a potent antidiabetic species and has been proved clinically and scientifically. However all the species of *Momordica possess* antidiabetic activity, the plant taken in our present study *Momordica dioica* may also be expected to exhibit antidiabetic property. The limited work with respect to the fruit pulp of *Momordica dioica* provoked the extension of further work.

*Momordica dioica* Roxb was subjected to conventional extraction method and the different extracts obtained were further studied for its various pharmacological activities like analgesic, anti-inflammatory, antimicrobial etc., and the bio-active extract was fractionated using column chromatography for
individual isolation of constituents, which was confirmed by spectroscopic techniques like UV, IR, $^1$H NMR, $^{13}$C NMR, MS, etc.

*Azadirachta indica* A Juss is a very famous plant called Neem tree belongs to Meliaceae family. Abundant works have been done on this plant and number of conferences was held to explore its use in traditional medicine. Many active principles have been isolated from various parts of this plant and its biological activity was screened scientifically. But paucity work on fruit skin of *Azadirachta indica* with respect to phytochemical and pharmacological screening prompted us to initiate work further.

In our study Azadiradione and Nimbin were isolated as per standard protocols from *Azadirachta indica* and was semi-synthetically modified using various borohydrides, oxidizing agents etc. The resultant synthetically modified products (reduced, oxidized and deacetylated derivatives) were characterized using various analytical techniques like UR, IR, NMR, MS etc. The synthetically modified and characterized compounds were screened for various pharmacological activities like analgesic, anti-inflammatory and antimicrobial.