**SCOPE AND OBJECTIVE**

The medicinal plants are closely connected with the traditional knowledge of its use. During the early periods, the knowledge of the medicinal properties of the plants was transferred from one generation to another generation orally and no documentation of the medicinal plants have been maintained. Even though, the herbal formulations are regaining their momentum, the major problem behind the herbal medicine is that there is a lack of standard protocol for their standardization and problem behind carrying out clinical trials. It is essential to evaluate the herbal plant scientifically and documents should be made to know their medicinal properties. To revitalize Indian medicinal heritage, through creative application of the traditional health sciences for the enhancement the quality of health care in rural and urban India, extensive research on plants for natural leads is very essential.

Free radicals have found a place in etiology of many diseases and there is a great deal of enthusiasm regarding the role played by the free radicals in many diseases, like in asthma, rheumatoid, hypertension, liver cell injury and carcinogenesis. Extensive scientific research has been carried out all over the world to use the medicinal plants and their extracts/lead molecules from herb as anti-oxidants. So there is a great demand of herbal medicines in the developed as well as developing countries because of their wide biological activities, higher safety margin when compared with synthetic drugs.

For the treatment of asthma, there are only fewer herbal products are available in the market. *Ventilago maderspatana* Gaertn and *Ziziphus xylopyrus* (Retz) Willd. have been selected for the investigation because both the plants are traditionally used by rural and tribal peoples of India to cure asthma. As per literature reported on *Ventilago maderspatana* Gaertn and *Ziziphus xylopyrus* (Retz) Willd. these have healing property against various respiratory disorders like cough and cold but there is a lack of scientific data on asthmatic disorder.

**Objective:**

- Study of cytomorphological and macromorphological characters of both plants.
- Subjecting the optimized extracts for photochemical studies.
- TLC and HPTLC analysis for the extracts and isolated compound.
- Evaluation of antiasthmatic effects of the extracts against synthetic allopathic drugs.
PLAN OF WORK

Phase I

a) Selection of the plants
b) Collection and authentication of plants
c) Extraction of plant materials by cold maceration process.
d) Pharmacognostical studies of plants.
   - Ash values
   - Extractive values
e) T.S. of the plant parts and powder microscopy.

Phase II

a) Phytochemical evaluation of the extracts.
b) Fractionation of the extracts and isolation of the lead compound
c) Chromatographic evaluation of fractions by thin layer chromatography.
d) Estimation of total phenolic and flavonoid contents.

Phase III

In vitro and in vivo pharmacological studies

a) Acute oral toxicity studies as per OECD guideline (423).
b) In vitro anti-oxidant study
   i) Lipid Peroxidation (LPO) assay
   ii) Estimation of total antioxidant capacity
c) In vivo anti asthmatic activity of extract
   i) Ovalbumin (OVA) induced allergic asthma

   Parameter observed in bronchoalevolar lavage fluid (BALF)
   - Total cell count
   - Differential count (Lymphocytes, neutrophils, eosinophils, basophils and monocytes)
   - Nitrite and nitrate estimation

   Parameter estimated with lung tissue
   - Total protein estimation
   - Malonyldialdehyde (MDA) estimation
   - Myeloperoxidase (MPO) estimation
   - Histopathology of lungs

Phase IV

a) Statistical analysis of the data