Aim and scope
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Medicinal plants have always been a source of lead compounds for drug discovery. Herbs are widely explored and used for its medicinal properties. A variety of biological effects of pharmacological benefits of extracts or constituents have been reported. It formed the basis of sophisticated traditional medicine systems like Unani, Ayurveda and tribal medicine, which have been in existence for thousands of years in the countries such as India and China. Presently traditional medicines are explored as an alternative system of medicine for their primary health care.

In view of this three herbs of interest were chosen for screening their antioxidant activity and among them Psoralea corylifolia was investigated further for their hepatoprotective and antidepressant activity. In addition to above the safety of extract was evaluated to find an alternative source to benefit mankind.

Development of functional, health foods/nutraceuticals has emerged as one of the leading areas in this millennium. Henceforth, development of Psoralea corylifolia incorporated functional foods would prove beneficial for health.

There is a necessity to carry out a systematic study on the utilization of Psoralea corylifolia for the health benefits and development of nutraceutical rich products as the information on these aspects is very less. Thus, the present study was undertaken to study the anti-depressant, hepatoprotective effects of Psoralea corylifolia and to develop nutraceuticals/functional foods using the same. Accordingly the following objective and plan of work was proposed initially and carried out.

Objectives of the investigations are

1. To study the anti-depressant effect of Psoralea corylifolia extracts in animal models
2. Partial purification and quantification of the bioactive fractions
3. Development of nutraceuticals
Plan of work:

1. Screening and preparation of various extracts of herbs possessing antioxidant potency in comparison with *Psoralea corylifolia*

2. Toxicity study of the most promising extract

3. Evaluation of the extract for hepatoprotective property in rats

4. Evaluation of the extract for anti-depressant activity in mice

5. Partial purification and quantification from the most promising extract

6. Application in the development of nutraceuticals, evaluation of storage characteristics and its stability
Schematic representation of plan of work

**PLAN OF WORK**

- Screening of herbs for *in vitro* antioxidant activity
  - Sequential extraction
    - *Tinospora cordifolia*
    - *Psoralea corylifolia*
    - *Glycyrrhiza glabra*
  - Potent extract
    - *Psoralea corylifolia* ethanol extract (PCE)
  - Animal model
    - Hepatoprotective activity:
      - Rat model
        - Carbon tetrachloride Model
        - Paracetamol Model
        - Serum biochemical analysis
        - Lipid peroxidation
        - Antioxidant enzyme analysis
        - Histopathology
        - Acute-toxicity 1-day
        - Sub-acute toxicity 14-days
        - Sub-chronic toxicity 90-days
        - Partial isolation and quantification
        - Development of health foods/nutraceuticals
    - Safety evaluation of extract
    - Anti-depressant activity:
      - Mice model
        - Forced swimming test (FST) Model
        - Tail suspension test (TST) Model
        - Immobility duration
        - Locomotor activity
        - Liver tissue analysis
        - Brain tissue analysis
        - Neurotransmitters
        - Cortisol
        - Monoamine oxidase (MAO-A and B)
        - Superoxide dismutase (SOD)
        - Malondialdehyde (MDA)
        - Chocolate
        - Compressed bar
        - Vati/vatakam
        - Avaleha
        - Serum biochemical analysis
        - Lipid peroxidation
        - Antioxidant enzyme analysis
        - Histopathology
        - Acute-toxicity 1-day
        - Sub-acute toxicity 14-days
        - Sub-chronic toxicity 90-days
        - Partial isolation and quantification
        - Development of health foods/nutraceuticals