3. AIM AND OBJECTIVES

Aim
Natural Products have long been a fertile source of medicinal agents for treatment of variety of diseases including cancer, diabetic and arthritis, which are projected to become the major causes of death in coming years. Therefore it is apt to screen some of the plants for their possible activities in treatment of such devastating diseases and to systematically study of their pharmacognostical characteristics providing new insights about their pharmacognosy and pharmacological activities.

Hence the present project was aimed to undertake - Comparative Pharmacognostical and Pharmacological study of Brueca amarissima, Cocculus hirsutus and Barleria prionitis.

Objectives
1. Collection of selected plants parts Cocculus hirsutus (roots), barleria prionitis (leaves) and brucea amarissima (fruits) and authentication of them with respect to review literature and by morphological study.

2. Comparative study of the plants, by conventional pharmacognostical techniques like microscopy and different physicochemical parameters such as extractive values and ash values for the plant parts selected.

3. Evaluation of antioxidant activity of the extracts (In vitro study)
   Model 1: DPPH (1-1-diphenyl 2-picryl hydrazyl) method.
   Model 2: Super oxide radical scavenging method.

4. Determination of acute oral toxicity (LD$_{50}$) by OECD guideline 423

5. Screening of anticancer activity of extracts (In vivo study)
   Model 1: Mouse bone marrow micronucleus test.
   Model 2: Ehrlich Ascites Carcinoma (EAC) in mice.

6. Screening of antiarthritic activity of extracts (In vivo study)
   Model 1: Proteoglycan–induce polyarthritis in mice.
   Model 2: Freund's adjuvant induced polyarthritis in rats.
Chapter 3

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7 Screening of antidiabetic activity of extracts (In vivo study)
   Model 1: Alloxan induced diabetes in rats.
   Model 2: Streptozotocin induced diabetes in rats.

8 Screening of anti-inflammatory and analgesic activity of extracts (In vivo study)
   Model 1: Hot plate method.
   Model 2: Paw edema.
   Model 3: Writhing test.

9 Screening of antihypertensive activity of extracts (In vivo study)
   Model 1: DOCA-salt induced hypertension in rat.

10 Screening of CNS activity of extracts (In vivo study)
    Model 1: Pentylenetetrazol induced convulsion test.
    Model 2: Antianxiety Activity (Light and Dark model).