Chapter 3

Aim and objectives

*Cassia tora* is also known as *Chakramarda* in ancient Sanskrit literature. Various Indian tribes were using crushed seeds of *Cassia tora* in skin ailments like dermatitis, erythema, rashes & wounds. In countries like India, there is vivid weather. In Southern and Western parts of India, there is moist atmosphere due to coastal areas, while northern region is dry. All these cause formation of various skin problems mentioned above. At present, steroids like Clobetasole, Dexamethasone & Betamethasone are widely used in skin disease due to its immune suppressing effect and quick recovery. But it has severe neuropsychiatric, metabolic, and endocrine side effects. Natural herbs/plants have been used since time immemorial to treat various maladies affecting humans and animals. They are safer, more effective and economical compared to synthetic drugs in treating infectious diseases. Nowadays, there are instances of development of drug resistance increases in commonly used steroids and antibiotics. To overcome such incidents, there is a strong need to discover new antibacterial substance from other sources. Evaluation of medicinal plants for antimicrobial activity is vital for discovering new molecules for therapeutic applications.

Hydrogel formulation contains various hydrophilic polymers and water as a solvent. On application of gel, it covers the affected area with a thin layer that makes the skin hydrated. It is beneficial in case of eczema and dermatitis where skin is totally dry.

The study was aimed to achieve following objectives:

- Collection and preparation of plant material *Cassia tora*. 
Extract of plant material by Sohxlet continuous hot extraction method.

Characterization of plant extract.

*In vitro* evaluation for antibacterial & antifungal activity.

*In vivo* evaluation on Animal models for common skin ailments.

Formulation and evaluation of topical hydrogel from *Cassia tora* leaf extracts.

Short term stability studies.