CHAPTER 3

AIM AND OBJECTIVE
# CHAPTER – 3

**CHAPTER - 3: AIM AND OBJECTIVE**

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CHAPTER -3: AIM AND OBJECTIVE

The objective of producing cheaper, potent and safer drugs of herbal origin can be met to some extent by promoting bioactive component formulation of herbal medicine for common diseases.

The proposed work is aimed to screen *Citrus maxima* and *Citrus aurantium* plant leaves, stem bark and fruit peel extracts for their anticancer, anti-inflammatory, analgesic, antioxidant and anti-microbial activities.

3.1 Plan of work

The work plan is divided into following phases;

**Phase I:**

**Plant materials and Preparation of plant extracts fractions**

- Collection and authentication of plant material.
- Extraction of the plant materials with different solvents (Ethanol, Acetone and Aqueous) by using Soxhlet apparatus.
- To investigate preliminary qualitative phytochemical constituents present in the extracts.
- Acute Toxicity studies (LD₅₀)

**Phase II:**

**Anti-microbial activities of C. maxima and C. aurantium**

- Anti-bacterial Activity
- Anti-fungal Activity

**Phase III:**

1. *In-vitro* antioxidant activity of *C. maxima* and *C. aurantium*
• DPPH assay
• Reducing power assay
• Hydroxyl radical scavenging activity
• Nitric oxide radical scavenging activity

2. Determination of Non enzymatic antioxidants of C. maxima and C. aurantium

• Determination of total phenolic contents
• Determination of total flavanoid contents

Phase IV:

Analgesic activities of C. maxima and C. aurantium

• Tail flick method
• Eddy's hot plate method
• Acetic acid induced writhing in mice

Anti-inflammatory activities C. maxima and C. aurantium

Acute anti-inflammatory activity

• Formalin induced paw oedema method

Chronic anti-inflammatory activity

• Formalin induced paw oedema in rats

Phase V:

Anticancer activities C. maxima and C. aurantium

• Trypan Blue Exclusion Assay for Cell Viability/Cell Death
• In vivo Anti Tumor Activity of Citrus maxima and Citrus aurantium: Ascitic Tumor Model
Parameters to be studied

- Body weight.
- RBC Count.
- WBC Count
- Tumor volume
- Packed cell volume
- Hemoglobin.