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## A BRIEF REVIEW OF ITS PHARMACOLOGICAL PROPERTIES OF ACALYPHA INDICA

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### Abstract

With more individuals looking for health solutions and treatments free from artificial chemical side effects, medicinal plants are making the transition from being used only in border areas to mainstream settings. More than 3500 plants have official medical recognition in India. In India, around 6000 plants are reportedly used in folk, traditional, and herbal medicine. The traditional medicine system of India and many other nations uses this plant, which is said to have anti-inflammatory, anti-tumor, anti-diabetic, antioxidant, anti-bacterial, antifungal, hepatoprotective, and anti-cancer properties. It is also used to monitor wound and ulcer healing. Glycosides, flavonoids, and tannins are all recognized to be abundant in it. *Acalypha indica*'s therapeutic benefits, medicinal qualities, and studies on its secondary metabolites demonstrate its significance as a useful medication.

**Keywords:** *Acalypha indica*; pharmacological; anti-cancer; wound healing; glycosides.

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Sanskrit: Harithamanjari, Muktavarchas, Rudra, and Aritamanjari. Telugu: Moorkonda, kuppi chettu, Pappantichettu, and Mulakan-dachettu.

### Introduction

*Acalypha indica* is one of the weed plants that contain important medicinal plant values. It can be found commonly in India, Sri Lanka, Thailand, and Pakistan. The extracts of various parts of the plant, leaves and Root Conventional s and stem parts are used for medicinal Purposes to treat various diseases such as the Eye infections, respiratory problems, rheumatism, and skin problems and to decrease blood sugar Level<sup>(1)</sup>. Generally, extraction has a high Efficiency and accuracy, but the thermal stress Might degrade target photochemical. This type of treatment, also known as treatment, was the main source of medical treatment during this time. The leaves of *Acalypha indica* may be used in cough and hence it is also called Kokkali or Kopi hepatoprotective (Daija Yantis et al.2015)'antioxidant (Shanmugapral.2011)'antibiotic (Amish et al.), Family: Euphorbiaceae

Distribution- It occurs throughout tropical Africa and South Africa, in India and Sri Lanka, as well as in Yemen and Pakistan. It is a common herb growing up to 40-75 cm tall with ovate leaves.



Figure; 1 Plan of work Methods and

### Materials

#### Methods and Materials

*Acalypha indica* including the ethno medicinal practices, photochemistry and pharmacological studies around the world. The ayurvedic formulations of *Acalypha indica* are used in the form of infusion, powder, success (expressed juice), tincture liquid extract, cataplasm and decoction. The leaves of *Acalypha indica* possess laxative properties in the form of powder<sup>(3)</sup>.

#### Botanical Description

*Acalypha indica* is a traditional medicinal plant, Well-known by older generations in many Countries, particularly in Africa and Asia. It grows well in most parts of west and south of Africa Northeast, including Somalia, Ethiopia and other Regions. The plant can also be found in

most wet, Tropical and temperate countries in Asia, Europe and both North and South American regions (2). It grows as a weed in bushes, backyards, alongside roads and other places such as home and crop premises. Male and female flowers occur on spike inflorescences that emerge at the leaf axil (the attachment point of the leaf to the stem). Kuppaimeni/Indian Nettle/Acalypha Indica is an herbaceous annual that has catkin-like inflorescences with cup-shaped involucre surrounding the minute flowers. Kuppaimeni is a medicinal plant, popular in Tamil Medicines.

The scientific name of Kuppaimeni the plant

- Annual Plantation.
- 75cm in height.
- Leaves are 2-8cm, oval in shape, having three main veins.
- Flowers grow on the spiked edges of leaves.



Figure; 2 Acalypha indica

#### Taxonomy;

The leaves have sub obtuse crenate-serrate and Base uneaten and glabrous thin. Their petiole is usually longer than the slender, blade, and stipulate minute. The leaves of the Acalypha Indica are simple and arranged spirally; 0.02 -12.00 cm petiole long; blade broadly ovate to Ovate-lance late; 2 - 9 cm × 1 - 5cm; base.

#### Plant Profile;

Scientific name; Acalypha indica

Taxonomic Classification kingdom; Plantae Unranked; Angiosperms, Endicott's order Malpighiales family; Euphorbiaceae

Genus; Acalypha

Species; A Indica Vernacular names Sanskrit; Amritanjanani

English; Indian Acalypha Hindi; Kopi, Kokkali

Telugu; Kuppichettu, harita - manjiri, Koopnita or Marapendi Constituents; Alkaloids " capes" and Acalyphin "Vernacular names in other countries Alkalify; Brazil Tie Xian; china Baron, Berber; Ethiopia Kauppinen; India Ricin Ella; Spain company; Sri Lanka Description;

Taste; Bitter Odour; Pungent

Solubility; Methanol

Distribution

Bitter indica Africa, Oceania, and South East Asia.

Habit:-Common annual shrub in Indian gardens, backyards of houses and waste Place throughout the plains of India.

Chemical constituents

Acalyphamide: Catechol's

Acalyphin: Flavonoids: Phenolic compounds.

3. Acalyphamide acetate: Saponins and terpenoids.

Distribution

Acalypha indica grows naturally in wet, Temperate, and tropical areas along the equator Cross-continental of Asian, Africa, Europe, Australia and South and North America(8). The Indian people have the documented records of Plant utilization for their traditional medicines as Well as conventional medicines many Australians recognized this plant in their area but are less inclined to consume it. acalypha indica also can be found in the Arabia gulf region based on the report that they consumed this plant as a food acalypha indica is also a common weed found in west Africa and south Nigeria (6).



Figure; 3 Acalypha Indica L. Leaves,

Phytochemical Study

Analgesic

- Acalypha indica has analgesic properties as Proven by conducting in vivo studies on Mice. They used writhing reflex method developed by to determine the analgesic Activity of the Acalypha indica hexane(11).
- The anti-Inflammation, antioxidant and phytochemicals in the fresh plant may be responsible this Inhibition. The results were measured by counting the writhing induced within 20 minutes immediately after the extract and standard were introduced into the mice(9).
- The 100 mg/ kg and 200 mg/kg of hexane extractions produced up to 61.1% and 67.2% of with in inhibition activities compared to the use of standard amino purine with a 79.9% writhing inhibition.
- The leaves have strong anthelmintic property Analgesic activity of the methanol extract was studied in mice by acetic acid-induced writhing reflex method as described before(17)

Uses:

Analgesics are medications that relieve pain. There are three main types: non-opioid analgesics, opioid analgesics, and compound analgesics that combine the two previous forms(12).

- Useful in mild to moderate pain like headache, pyrexia. Myalgia.

- Patient with PUD (peptic ulcer disease).
- Patients who are taking other uricosuric drugs a drug that reduces pain.
- Analgesics include aspirin, acetaminophen, and ibuprofen (salicylate competes with the uric acid in tubular Secretion).

#### Anti-Helminthic Activity

An anti-helminthic drugs used to expel parasite worms that usually include in the human body parts , the parasite worm can penetrate animal and human bodies through any available cavities like skin and mouth .an anthelmintic drug derive from easily available herbal medicine is encouraged since it can save costs in treatment. Both used a similar method to study the anthelmintic activity<sup>(13)</sup>.

The Following Anti helminthic Agents are discussed individually in LIVERTOX<sup>(15)</sup>

- ❖ Albendazole.
- ❖ Ivermectin.
- ❖ Mebendazole.
- ❖ Nitazoxanide.
- ❖ Pentameter.

#### Uses

Drugs used to treat parasitic worm infections.

- ❖ Helminthic infections.
- ❖ Unlike protozoa, helminthes are large and have Complex cellular structures Drug treatment is very specific to the organism.

#### Anti-Cancer Activity

Acalypha indica plant extract also has the ability to become an anticancer cell lines have been testes with acalypha indica leaf extracts including KB-Oral cavity cancer<sup>(10)</sup>. The ethanolic extract of acalypha indica inhibitor MCF7- Brest cancer with an inhibition concentration value 30ml in addition in a recent study has revealed that the quebrachitol could participate in several important mechanisms as potential anti-cancer drug<sup>(13)</sup>.

#### Cancer Types

Categorized based on the functions/locations of the cells from which they originate<sup>(9)</sup>: Carcinoma:

- A tumor derived from epithelial cells, those cells that line the surface of our skin and organs (80-90w of all cancer cases reported)
- Sarcoma
- A tumor derived from muscle, bone, cartilage, fat or connective.
- Leukemia: A cancer derived from white blood cells or their precursors.
- Lymphoma: A cancer of bone marrow derived cells that affects the lymphatic System

Side effects of cancer treatment<sup>(19)</sup>

- Neutropenia.

- Lymphedema.
- Hair Loss.
- Nausea and Vomiting.
- Problems with Thinking and Remembering Things.
- Cancer Pain.

#### Conclusion

The information from Acalypha India investigations has been updated in this study, covering many factors such as phytochemical content, ethnomedical practices, and pharmacological actions throughout entire regions. Acalypha indica has been used as an ethnomedical herb; significant phytochemical components and pharmacological research have been found and discussed. Depending on the therapeutic activity, the plant may be used for treatment. The plant's leaves and root are the parts that are most often used in traditional medicine. Studies have found 24 different pharmacological actions, some of which have had encouraging outcomes. The most promising therapeutic treatments include those with anti-tumor, anti-inflammatory, antibacterial, anthelmintic, anti-diabetic, anti-hyperlipidemia, anti-obesity, anti-venom, and wound-healing qualities (25). This claims that hexane extract has a strong ability to kill breast cancer cells and make drugs. be investigated in order to identify the active ingredients in breast cancer.

#### Author contributions

All authors are contributed equally.

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#### Declaration of Competing Interest

The authors have no conflicts of interest to declare.

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