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Phytochemical Analysis of Ethanolic Extract of *Lamtana Camara*

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Abstract:

This research article has been explored *Lamtana Camara* as Medicinal plants have therapeutic potential due to the presence of natural antioxidants functioning as reducing agents, free radical scavengers and quenchers of singlet oxygen. Majority of *Lamtana Camara* antioxidant activity is due to bioactive compounds viz. flavones, isoflavones, flavonoids, anthocyanins, coumarins, lignans, catechins and isocatechins. A bioactive constituent has always been a challenging task for the researchers. Our study showed photochemical analysis of *Lamtana Camara*.

Key-Words: *Lamtana Camara*, Phytochemical, Antioxidant, Reducing agent.

Introduction

Lantana camara, Linn. (family: Verbenaceae), is a shrub, growing luxuriantly at elevations up to 2000 m, in tropical, subtropical and temperate parts of the world[1]. Also known as Bara Phulnoo[2]. It has ornamental value and has spread as an intractable weed in the world . Geographical distribution: *L. camara* is a tropical origin plant and native to Central and Northern South America and the Caribbean. *L. camara* is now spread to nearly 60 countries viz, New Zealand, Mexico, Florida, Trinidad, Jamaica and Brazil[3]. In India, *L. camara* was probably introduced before 19th century. Currently *L. camara* is distributed throughout India. *L. camara* is known by different name in various different languages in India. *L. camara* has scientifically studied for various therapeutical activities such as antioxidant, antibacterial, antipyretic, larvicidal, insecticidal, antimicrobial, wound healing and anti-hyperglycemic *L camara*posses Pentacyclic triterpenoids

which are known to have antibacterial, Keeping in view the theurapitcal potential of the *L.camara*[4],we decided to make an attempt to look for the treatment of a deadly disease.

Material and methods

Plant material collection Plant *Lantana camara*,Linn.ware collected from sanjivani ayurvedic nursery Bhopal during October month. Than dried up under the shed dry for three week furthermore crush it.

Soxhlet extraction:

Acetone water (1:1) Soxhlet extraction is only required where the desired compound has a limited solubility in a solvent, and the impurity is insoluble in that solvent. If the desired compound has a high solubility in a solvent then a simple filtration can be used to separate the compound from the insoluble substance. The advantage of this system is that instead of many portions of warm solvent being passed through the sample, just one batch of solvent is recycled. This method cannot be used for thermo labile compounds as prolonged heating may lead to degradation of compounds[5].

Analysis for phytochemical

- **Test for Proteins**:

Few drops of nitric acid were added by the sides of the test tube very gently to 1 ml methanol extract. Formation of yellow colour indicated the presence of protein in the sample[6].

- **Test for carbohydrates:**

1 ml each of Fehling A and Fehling B was added in diluted extract and heated for 30 minutes andobserved for the formation of brick red colour[7].

- **Test for Resins:**

Five milliliter of distilled water was added to the methanol extract and observed for turbidity[8].

- **Test for Tannins**:

5 ml of 45% ethanol was added to 2 g of the ground sample and boiled for 5 min. The mixture was cooled and filtered. Then 3 drops of lead sub acetate solution was added to 1 ml of the filtrate. A gelatinous precipitates were observed which indicates the presence of Tannins. Another 1 ml of the

filtrate was added 0.5 ml of bromine water. A pale brown precipitates were observed indicating the presence of Tannins[9].

- **Test for Saponins:**

0.5 g of methanol extract was added to 5 ml of distilled water in a test tube. The solution was shaken vigorously and observed for a persistent froth. The frothing was mixed with 3 drops of Olive oil and shaken vigorously after which it was observed for the formation of an emulsion[10].

- **Test for Flavonoids:**

0.5 g of the macerated sample of was ntroduced into 10 ml of ethyl acetate and heated in boiling water for 1 min. The mixture was then filtered. 4 ml of the filtrate was shaken with 1 ml of 1% aluminum chloride solution and kept. Formation of a yellow colour in the presence of 1 ml dilute Ammonia solution indicated the presence of flavonoids[11].

- **Test for alkaloids:**

5 gm of ground material was extracted with 10 ml Ammonical Chloroform and 5 ml chloroform. The mixture was filtered and the filtrate was shaken with 10 drops of 0.5 M Sulphuric acid. Creemish white precipitate was observed for the presence of Alkaloids[11].

- **Tests for Steroids:**

2 ml of acetic anhydride was added to 0.5 g of methanol extract and 2 ml of Sulphuric acid was added by the sides of the test tube and observed for the colour change from violet or blue-green[11].

- **Test for Phenols:**

Methanol extract was taken in a test tube and mixed with distilled water and warmed. To this 2 ml f Ferric chloride solution was added and observed for the formation of green or blue colour[11].

- **Test for Glycosides:**

About 0.5 ml of methanol extract was taken in a test tube and added 1 ml glacial acetic acid containing traces of ferric chloride. To this solution 1 ml conc. Sulphuric acid was added and observe for the formation of reddish brown colour at the junction of the two layers and the upper layer turned bluish green in the presence of glycosides[11].

Separations analysis:

TLC:

TLC analysis was performed on aluminum plates pre-coated with silica gel 60 (0.063-0.200 mm mesh) several solvents used were assessed for their ability to fractionate the chemical constituents in the starting material. The mobile phase consisted of solvents (To facilitate mobile phase migration, blotting paper (Whatman 3mm) were allowed to soak and equilibrate for 20 to 30 minutes previous to TLC runs. Detection was carried out by UV light at 254 and 365 nm, and with iodine crystals.

Preparative TLC plates were prepared for larger sample analysis. To prepare a 1.0 mm thick preparative TLC plate, twenty-five grams of silica gel 60 (0.063-0.200 mm mesh) were suspended in 50 mL of deionized water, shaken vigorously in an Erlenmeyer flask for 45 seconds. The resultant slurry was poured on a 15 x 15 cm glass plate and spread evenly with a glass rod until the surface was even. The plate was allowed to dry for several hours and then placed in an oven at 120 ^{o}C for 2 hours to activate[12].

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Results

Tests		*Lantana camara*, Linn				
1.	Test for carbohydrate • mollish test • Tannic acid test	++ve +ve	++ve +ve	+ve +ve	+ve +ve	+ve +ve
2.	Test for protein • Millons reagent • Xantoprotein test	+ve -ve	+ve -ve	+ve -ve	+ve -ve	+ve -ve
3.	Test for Amino acid • Test for cystien	-ve	-ve	+-ve	-ve	+-ve
4.	Test for steroied • Salkowiski test	+ve	+ve	++ve	+ve	+ve
5.	Test for glycosides • For deoxysugar (keller)	+ve	+ve	+ve	+ve	+ve
6.	Test for falvonoids	+ve	+ve	+ve	+ve	+ve
7.	Test for alkaloids • Mayer's test • Wagner test	++ve +ve	+ve +ve	+ve +ve	+ve +ve	+ve +ve
8.	Test for tannic and phenolic compound • 5% fecl3 • Lead acetate • Dil. Potassium per magnet	-ve +++ve +ve	-ve +ve +ve	-ve +++ve +ve	-ve +++ve +ve	-ve ++ve +ve
9.	Test for organic acid • Conf. Test for oxalic acid	+ve	++ve	+ve	+ve	+ve
10.	Test for inorganic acid • Test for sulphate	+ve	+ve	+ve	+ve	+ve
11.	Test for chloride	+ve	+ve	+ve	+ve	+ve

Discussion

Although a large number of herbal drugs are being added to the world of modern pharmacopoeia, therefore the search for new therapeutic constituents from *Lantana camara*, Linn are genuine and

urgent. In India, there is an ocean of medicinal plants and rich medicinal flora, but still only a few herbs are been searched as therapeutic agents. There are large active ingredients are left which have not been investigated thoroughly from modern scientific view or their curative values have not been recognized. Thus there is an urgent need for systematic phytochemical investigation of *Lantana camara*, Linn which have not been investigated systematically. Further analysis of *Lantana camara*, Linn can be carried out by way of making use of different analytical methods such as HPTLC, HPLC, FTIR, NMR and UV spectrophotometer analysis.

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