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PRELIMINARY PHYTOCHEMICAL SCREENING OF EXTRACT IN TECOMA STANS

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Abstract:
The important source of phytochemical that offer traditional medicinal treatement of various disease are medicinal plants. They are also an local heritage with global importance. The therapeutic importance of *Tecoma stans plants feature of its medicinal characters is presented on the paper givien. Tecoma stans plants are been collected and then they are shadow dried and extracted with petroleum ether, chloroform,benzene, ethyl acetate,ethanol,hydroalcohol and water,byusing standard procedure and the result of preliminary phytochemical screening of tecoma stans plants revealed presence of alkaloids,flavonoids ,phenol,steroids,and tannins in plants extracts of Tecoma stans*

Keywords: Tecoma Stans & Phytochemical Stedies

Introduction:

A survey of literature on *Tecoma stans (Family: Bignoniaceae*) popularly known as Yellow Bells or Ginger Thomas revealed that alkaloids, steroids, saponins, anthraquinones and flavonoids, tannins, terpenes, phytosterols, phenols, and glycosides constitute major classes of phytoconstituents of this plant. Pharmacological reports revealed that it is having antidiabetic, anticancer, antioxidant, antispasmodic, antimicrobial, and antifungal, properties, and extensively used in the treatment of diabetes. It is a fast growing evergreen plant with 20-30 ft in height, having moderate growth and yellow flowers. Leaves are green, compound, imparipinnate, and lanceolate with serrate margin. Fruits are elongated and clustered. Ginger thomas leaves, bark and roots contains biologically active chemicals, and extracts from those tissues are in use as traditional folk medicines [1].

The increase in prevalence of multiple drug resistance has showed down the development of new synthetic antimicrobial drugs and the new drug is necessary to search for new antimicrobial from alternative sources. Phytochemicals from medicinal plants showing antimicrobial activities have the potential of filling this need because of structures are different from those of the more studied and their more action may too very likely differ [2]. Ornamental plants serve as an alternative host for begomovirus in gardens and may allow the transmission of begomovirus to other crop and medicinal plants thus enhances the host range of this virus in different regions of the India [3].

Tecoma stans (L.Juss.ex Kunth) or Yellow bells, from family Bignoneacea, is a semievergreen ornamental tropical shrub which is used traditionally for reducing blood glucose. Almost all the parts of *Tecoma stans* are of medicinal importance and used traditionally for the treatment of various ailments. The *Tecoma stans* leaves, barks and roots have been used as muscle relaxant, mild cardiotonic and chloretic activity [4].

Materials and Methods:

Collection of Plant Materials:

The plant were collected from the tree found in the Poondi Vvillage, Thanjavur (Dt). The collected plants were botanically authenticated by Dr. S. John Britto Rapinat

Herbarium, St. Joseph's College, Trichy. The plant were taken for the investication of phytochemical analysis. The were clean thoroughly 2-3 time with running tap water. The plant metrerial was then air dried under shade then make the powder were kept plastic bags.

Preparation of Extract:

Plants were detached and dried in shade. About 100gms of dried plant were ground to powder and exhaustively extracted with 600 ml ethanol, methnol, petroleum ether, Ethyl acetate,water using soxhlet apparatus and the extract was concentrated under reduced pressure and then stored in an air tight container for further study.

Preliminary Phytochemical Screening:

The various solvants extracts of the phytochemical stedies in *Tecoma stans*

Alkaloids:

Mayer's test; a small amound quantity of the extract was treate with few drops of dilute HCL and filtered was tested with alkaloid Mayer's reagent. Formation of cream precipitate indicated the presence of alkaloids. Dragendroff's test: To 2-3ml of the extract added few drops of drops of dragendroffs reagent. Formation of orange red or reddish brown precipate indicateted the presence of alkalids.

Tannins:

Ferric Chloride Test:

Small quantity of extract was mixed with water and heated on water bath. The mixture was filtered and ferric chloride was added to the filtrate. A dark green solution indicates the presence of tannins.

Phlobatanins:

1ml of extract was dissolved in distilled water and filtered. The filtrate was boiled with 2% Hcl solution. Red precipitate indicates the presence of phlobatanins.

Flavonoids:

Shinoda's Test: To one ml each of alcoholic extract, a small piece of magnesium ribbon or magnesium foil was added and 3-4 drops of conc.HCL was added,change in colour from red to pink shows the presence of flavonoids.

Saponins:

Froth Test: About 0.2 g of the extract was shaken with 5 ml of distilled water and then heated to boil. Frothing (appearance of creamy mass of small bubbles) shows the presence of saponins.

Phenol:

Ellagic Test: One ml of each of the various extracts dissolved in alcohol and treated with 2-3 ml of 5% neutral ferric chloride solution. Colour change indicates the presence of phenols.

Steriods:

Steroids Test: The two ml of acetic anhydride was added to 0.5 g ethanolic extract of sample with 2ml H_2SO_4. The colour changed from violet to bule or green in some sample indicating the presence of steroids.

Carbohydrates:

The alcoholic extract was dissolved in five ml distilled water and filtered. The filtrate was treated with two drops of alcoholic α-naphthol. Formation of a violet ring at the junction of the two layers indicates the presence of carbohydrates.

Detection of Reducing Sugars:

Two ml of the extract were heated with equal volumes of Fehling solutions A and B. Appearance of a precipitate indicates the presence of reducing sugars.

Detection of Compound Reducing Sugars:

Two ml of the extract were hydrolyzed by boiling with five ml diluted HCl; the resulting solution was neutralized with NaOH solution. A few drops of Fehling solution were added, then heated on a water bath for two minutes. Appearance of a reddish-brown precipitate indicates the presence of compound reducing sugars.

Results and Discussions:

The phytochemical screening of various solvent using methnol, ethnol, water, petroleum either. The extract of the petroleum ether showed the presence of anthraquinone and cardiac glycosides whereas chloroform extract along with anthraquinone and cardiac glycosides showed presence of alkaloids, terpenoids and carbohydrates. Maximum diversity of chemical constituents were present in methanol extract that includes alkaloids, anthraquinone glycosides, terpenoids, saponins, flavonoids, tannins and phenolic compounds, proteins, amino acids, carbohydrates. [5] Plant derived compounds in particular have gained importance in anticancer therapy and some of the new chemotherapeutic agents currently available for use includes paclitaxel, vincristine, podophyllotoxin and camptothecin, a natural product precursor from water soluble derivatives. Obviously natural products are extremely an important source of medicinal agents. Although there are some new approaches to drug discovery, such as combinatorial chemistry and computer based molecular modellingdesign, none of them can replace the importance of natural products in drug discovery and development [6 & 7]. Literature data prove that triterpenes and flavonoids are biologically active against different strains of bacteria and many human cancer cell lines [8, 9 & 10.]

Table - 1

Extracts	Alkaloids	Flavonoids	Saponins	Tannins	Phenols	Steroids	Anthroquinones
Methanol	+	+	+	+	+	+	+
Ethanol	+	+	+	+	+	+	+
Water	+	+	+	+	+	+	+
Ethyl Acetate	–	–	+	+	+	–	–

Conclusion:

The present results showed the crude extracts exhibited antitumor, antioxidant, antimicrobial, hypoglycemic, free radical anti-inflammatory, and antidiabetic properties. Monoterpenes, Polyphenols, saponins, tannins and flavonoids are well known for their biological that *Tecomastans* (L). It is has greater cold tolerance than var. *stans.* In recent years, numerous improved cultivars of var. *Stans* have been available. Most are advertised as having more compact shapes, longer flowering periods, and a single trunk The leaf of plant contain emetine and other alkaloids as well saponins. Its properties are as follows phytochemical properties in the plant of *Tecomastan. This suggests that* methnol, ethnol,water, petroleum ether, this kind of solvent is given more compound that's compound is cure more aliments. Phytochemical and pharmacologicall active agents due to their rich phytochemical constituents. In further work should be carried out isolate, new compound cure even cancer also.

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References:

1. Journal of Medical and Pharmaceutical Innovation; 1 (2) 2014; 1-4
2. Fabricant, D.S. and Fansworth, N.R., The value of plants used in traditional medicine for drug discovery. Environment Health Perspective, 2001, 109, P. 69-75.
3. Marwal A, Sahu A, Prajapat R, Gaur RK. First report of association of begomovirus with the leaf curls disease of a common weed, Datura inoxia. Indian J Virol 23: 3–84, 2012.
4. Research Journal of Pharmaceutical, Biological and Chemical Sciences March - April 2014 RJPBCS 5(2) Page No.608
5. --------, International Journal of Medicine and Pharmaceutical Sciences (IJMPS), ISSN(P): 2250-0049; ISSN(E): 2321-0095 Vol. 5, Issue 4, Aug 2015, 69-72
6. Jagetia GC, Rao SK. Evaluation of Antineoplastic Activity Guduchi (Tinosporacordifolia) in Ehrlich Ascites Carcinoma bearing, Mice. Biol. Pharm. Bull. 2006; 29: 460-466.
7. Heinrich M, Bremner P. Ethanobotany and ethanopharmacy their role for anticancer drug development. Curr Drug Targets. 2006; 7: 239.
8. Havsteen BH. The biochemistry and medical significance of the flavonoids. Pharmacol. Therap. 2002; 96: 67-202.
9. Mahato SB, Nandy AK, Ray G. Triterpenoids.Phytochemistry. 1992; 31: 2199-2250.
10. Min BS, Kim YH, Lee SM, Jung HJ, Lee JS, NA MK, Lee CO, Lee JP, Bae K. Cytotoxic triterpenes from Crataeguspinnatifida. Arch. Pharm. Res. 2000; 23:155-158
11. Little, L. Jr., R. Woodbury and F. Wadsworth. 1974. Trees of Puerto Rico and the Virgin Islands. USDA, Washington, D.C.
12. Gilman, E. and D. Watson. 2011. Tecoma Stans: Yellow-Elder. ENH783. UF/IFAS, Gainesville, Florida