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Phytochemical analysis and *in vitro* antibacterial activity of *Tabebuia argentea*

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Abstract

It is recommended that, this movement of mixes would have the capacity to invigorate bodily fluid, bicarbonate and the prostaglandin discharge and balance with the falling apart impacts of responsive oxidants in gastrointestinal lumen. The point of this examination was to of methanolic ethanol hydro liquor removes *Tabebuia argentea* Fundamental Phytochemical screening. Fundamental phytochemical screenings demonstrated the nearness of alkaloids, flavonoids, tannins, saponins, phenols, terpenoids, glycosides and sugars in both the concentrates. End: This examination affirmed the antiulcer properties of this plant as it is utilized in conventional prescription. Among the two concentrates Methanolic concentrate of *Tabebuia rosea* is a potential wellspring of Antibacterial and consequently could avoid numerous ailments.

Keywords: *Tabebuia argentea*, preliminary phytochemical screening

Introduction

Restorative plants have strive a critical job inside the improvement of the new stylish meds. popular drugs square measure straightforwardly utilized by a greater part of societies round the world (Schulz *et al.*, 2001) [1]. it's measurable that there square measure more than 260,000 invigorating plants square measure assets for a substitution medicine and knows plant danger and shield human and creatures from characteristic poisons (Nicholas *et al.*, 2008) [2]. For instance, a few nourishment crops garlic have energizing impacts. In India, refreshing plants square measure utilized as a solution for a few illnesses have clarified by "Apparatus Veda Samhita". Writing like Raghuvamsa composed by Kalidas comprise a great deal of information with respect to morphological choices of the numerous plants (Jellin *et al.*, 2002) [3]. Indeed, even nowadays amid this composed material and Unani arrangement of meds conjointly bargain that the plant extricate square measure utilized as powerful cure against changed illnesses.

Plants produce mammoth measures of bioactive mixes alluded to as phytochemicals, and each plant incorporates a gigantic kind of these phytochemicals (Lown, 1993) [4]. Phytochemicals not exclusively keep up the plant's physiological exercises, anyway they conjointly shield it against remote specialists like bacterium, parasites, creepy crawlies and creatures that exploit them (Anwannil and Atta, 2006) [5]. Since times of yore, phytochemicals are utilized as medicines to fix differed ailments. By and by, various pharmaceutical operators contain regular mixes, and in addition prescription that contain varieties of those characteristic molecules (Dahanuka *et al.*, 2000) [6]. Common stock square measure A creative supply of remedial operators for treating irresistible sicknesses, and option ailments (Wang *et al.*, 2007) [7]. Phytochemicals like carotenoids, alkaloids, flavonoids and polyphenols, gangs inhibitor movement and shield cells against aerophilous damage and scale back the risk of growing beyond any doubt assortments of malignant growth. The greater part of the dynamic mixes square measure phenolics, nutrient C, nutrient E, tannins and carotenes (Okeke *et al.*, 1999) [8].

Material and Methods

The medicinal plants used in this study of the flower of *Tabebuia argentea* was collected from the Sastra University (April 2015) and identified at Rapinat herbarium, St. Joseph College, Tiruchirappalli, Tamil Nadu, India.

Extract preparation

The flower of *Tabebuia argentea* was collected, cleaned and shade-dried separately. The dried each medicinal plants was pulverized by a mechanical grinder and passed through a 20-mesh sieve. Powdered samples (500g) each were separately extracted with petroleum ether, chloroform, aqueous, methanol and ethanol using a soxhlet apparatus.

The extraction was carried out for 24h at room temperature with mild shaking. The extracts were filtered and concentrated at 35 °C and it is used for further analysis (Kameshwara *et al.*, 2003)^[9].

Qualitative analysis of phytochemicals in both the flower of *Tabebuia rosea* and the flower of *tabebuia argentea*

Chemical tests were carried out on the flower of *Tabebuia argentea* using standard procedures to identify the constituents as described.

Antibacterial activities of crude extract (Disc diffusion method)

Antibacterial activity of methanolic extract of flower *Tabebuia argentea* was resolute using the disc diffusion method. The petridishes (diameter 60 mm) was prepared with Muller Hinton Agar and inoculated with test organisms. Sterile disc of six millimeter width were impregnated with 10 µl of crude extract at various concentrations of 50-250 mg/ml respectively. Prepared discs were placed onto the top layer of the agar plates and left for 30 minute at room temperature for compound diffusion. The dishes were incubated for 24 h at 37 °C and the zone of inhibition was recorded in millimeters (Solomon *et al.*, 2015)^[10].

Table 1: *Tabebuia argentea* Flower Extracts

S. No	Name of constituents	Petroleum ether	Chloroform	Methanol	Ethanol	Aqueous
1	Alkaloids	-	-	+	+	-
2	Flavonoids	-	-	+	+	+
3	Protein	-	-	+	+	+
4	Carbohydrate	-	-	+	+	+
5	Tannin	-	+	+	+	+
6	Sterols	-	-	+	+	+
7	Glycosides	-	-	+	+	+
8	Phenols	-	-	+	+	+
9	Saponins	-	-	+	+	+
10	Terpenoids	-	+	+	+	+

Table 2: *Tabebuia argentea* Flower Extracts

Plant extracts	Concentrations (mg/ml)	Organisms/Zone of inhibition (mm)				
		<i>Bacillus subtilus</i>	<i>Escherichiacoli</i>	<i>Shigella flexinari</i>	<i>Klebsilla pnemonia</i>	<i>Pseudomonas aeruginosa</i>
<i>Tabebuia argentea</i>	50	0	0	0	0	0
	100	9	8	0	7	9
	150	10	8	7	8	10
	200	11	10	8	9	11
	250	12	11	9	10	12

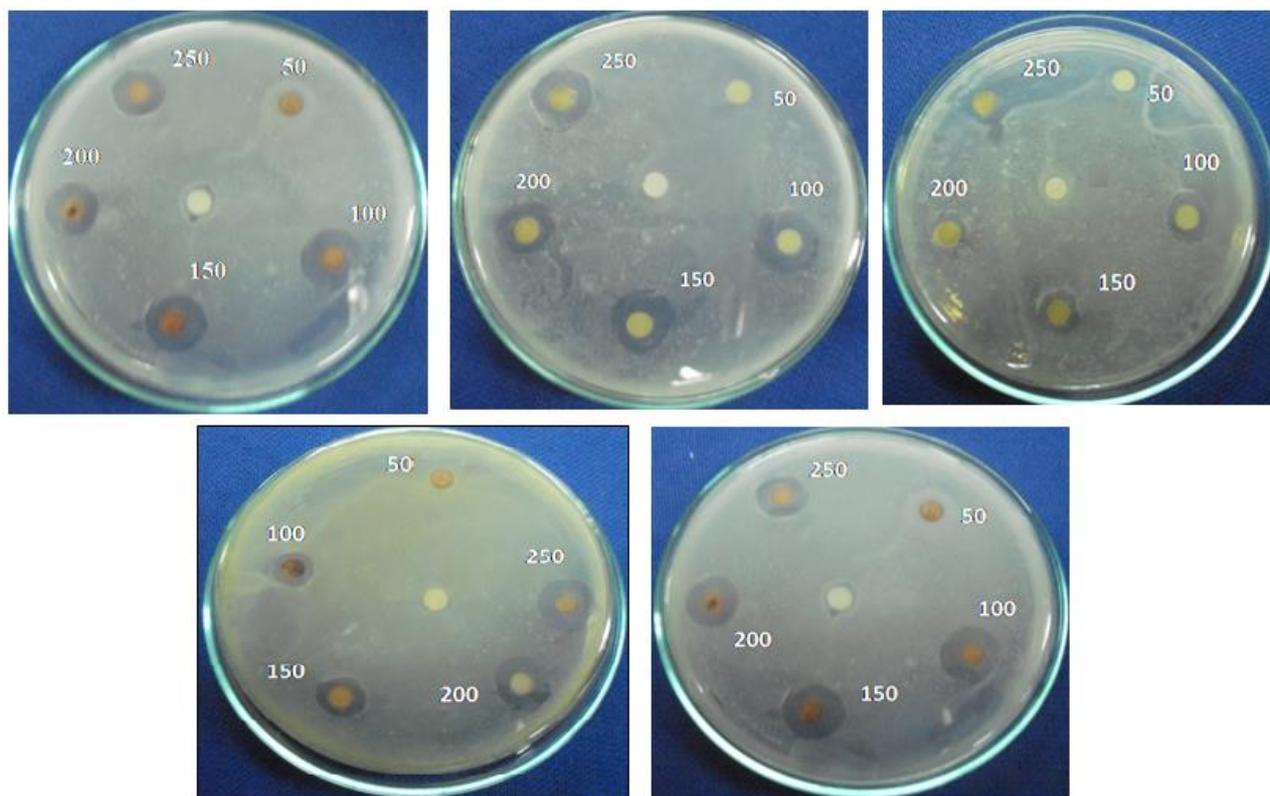


Fig 1: *Tabebuia argentea* Flower Extracts

Results and Discussion

The phytochemical screening of *Tabebuia argentea* extricate uncovered the nearness of saponins, steroids, terpenoids, glycosides, alkaloids, tannins, anthraquinone and flavonoids was talked about by Govindappa *et al.*, 2014^[11]. The nearness of a few phytochemicals like flavonoids, tannins, saponins and alkaloids were affirmed in the ethanolic concentrate of leaves of *Tabebuia rosea* (Saravanan *et al.*, 2011). Madhumitha *et al.*, 2015^[12]. Recommended that the Protein and Diterpenes are available in the oil ether, ethyl acetic acid derivation and methanol removes while glycosides, Phenol, phytosterol, flavonoids, tannin and amino corrosive are ordinarily present in both ethyl acetic acid derivation and methanol concentrate of *Tabebuia rosea* dried blossoms. The very polar alkaloids mixes indicated positive outcome in methanol separate are available.

From the above examination reason that the methanol concentrate of blossom of *Tabebuia rosea* and *Tabebuia argentea* can possibly go about as a wellspring of helpful medications in view of essence of different phytochemical constituents, for example, alkaloids, flavonoids, phenol, terpenoids, saponin and sugars. These phyto constituents appeared to be the possibility to go about as a wellspring of helpful medications and furthermore to enhance the wellbeing status of the customers because of the nearness of different exacerbates that are indispensable job for good wellbeing (Kusumoto *et al.*, 1995)^[13]. Past examination proposed that the primer phytochemical screening of the leaves of *Tabebuia rosea* uncovered the nearness of saponins, tannins, phenolic acids, flavonoids and alkaloids (Sathiyia and Muthuchelian, 2008)^[16]. The phytochemical screening of *Tabebuia argentea* remove uncovered the nearness of saponins, steroids, terpenoids, glycosides, alkaloids, tannins, anthraquinone and flavonoids was talked about by Govindappa *et al.*, 2014^[14]. The nearness of a few phytochemicals like flavonoids, tannins, saponins and alkaloids were affirmed in the ethanolic concentrate of leaves of *Tabebuia rosea* (Saravanan *et al.*, 2011). Madhumitha *et al.*, 2015^[15]. proposed that the Protein and Diterpenes are available in the oil ether, ethyl acetic acid derivation and methanol separates though glycosides, Phenol, phytosterol, flavonoids, tannin and amino corrosive are generally present in both ethyl acetic acid derivation and methanol concentrate of *Tabebuia rosea* dried blossoms. The profoundly polar alkaloids mixes demonstrated positive outcome in methanol separate are available.

Past investigation recommended that the counter bacterial movement of the compound segregated from ethyl acetic acid derivation portion of blossoms of *Tabebuia rosea* was appeared to have antimicrobial action against microorganisms and organisms, viz. Four bacterial strains were *S. typhi*, *E. coli*, *E. faecalis*, *B. cereus* and two contagious strains *C. lunata* and *C. albicans* by utilizing circle dispersion strategy (Solomon *et al.*, 2016)^[17]. *In vitro* antibacterial examinations on the ethanolic concentrates of leaves of *Tabebuia rosea* were done on *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Klebsiella pneumoniae*, *Escherichia coli* and *Candida albicans* by utilizing agar circle dispersion strategy (Sakthi Saravanan *et al.*, 2011)^[15]. The ethyl acetic acid derivation extricate got from the internal bark of *Tabebuia ochracea* and *Tabebuia rosea* restrains *Staphylococcus aureus* development at fixations running somewhere in the range of 1.25 and 10 mg/well (Riffel *et al.* 2002)^[13]. The hexane concentrate of the *Tabebuia avellanadae* (equivalent word *Tabebuia impetiginosa*) heartwood and its divisions showed antibacterial action against methicillin-safe *Staphylococcus*

aureus (MRSA) and methicillin-touchy *Staphylococcus aureus* (MSSA). (Yamashita *et al.* 2009)^[18]; these naphthoquinones are found in the inward bark of *Tabebuia avellanadae* (Wagner *et al.* 1989)^[19]. The ethanol separated from the leaf of *Tabebuia rosea* has likewise been assessed; at fixations somewhere in the range of 50 and 300 mg/mL (50,000 and 30,000 mg/L) it can restrain the development of *Klebsiella pneumoniae* (Sathiyia and Muthuchelian 2008)^[20]. This antibacterial action can be related with the nearness of different dynamic standards or phytoconstituents, for example, phenolic mixes, quinoids and flavonoids present in the leaf ethanol concentrate of *Tabebuia rosea* (Joselin *et al.* 2013)^[21].

Conclusion

The present examination has been discovered valuable, that is course of action of dynamic mixes are found in oil ether, ethanol and wood soul hydro liquor evacuates however glycosides, Phenol, phytosterol, flavonoids, phenol and amino damaging unit normally favoring in every alkyl carboxylic destructive acceptance and wood soul. this kind of dissolvable concentrates of plant thing, methanol plainly obvious higher medicament potential by then relating CH₃)₂CO segregates the opening of changed bioactive mixes., phenols, alkaloids and flavonoids Legitimizes the use of the entire plant for different ailments by standard counsels. It are consistently possible that the *Tabebuia argentea* sprouts of getting logically normal dynamic and its my future examination Methanolic focal point of the *Tabebuia argentea* is similarly a possible wellspring of medicament and through this procedure may keep up a vital separation from varied whole exceptionally astounding afflictions moreover.

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