

BRIDELIA SCANDENS: REVIEW ON TRADITIONAL USES AND PHARMACOLOGICAL ASPECTS

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Abstract

Plants are being used as a medicine to heal various disorders from the beginning of civilization. *Bridelia scandens* belonging to the family Euphorbiaceae is distributed in India and other regions in the world. Different parts of *B.scandens* are used traditionally in treatment of jaundice, malaria, herpes, oral problems, allergies, inflammation, scabies, and dermatitis and so on. *B.scandens* has been investigated by researchers for its biological activities and therapeutic potentials such as antidiabetic, antioxidant, antibacterial, hepatoprotective activity. However studies are yet to be carried out in order to prove the folklore usage of this plant. The present review focuses on folkloric uses, phytoconstituents, and pharmacological activities of the extracts of *B.scandens*.

Keywords: *Bridelia scandens*, Hepatoprotective, Antioxidant, Antidiabetic.

1. INTRODUCTION

Medicinal plants are being used ever since from beginning of civilization to treat various illnesses. Till the industrial revolution herbal medicine was only known to mankind in the name of therapy [1, 2]. However, today there is colossal storage of knowledge concerning to therapeutic usage of these medicinal plants [3]. India is known for its wealthiest resource of medicinal flora, used traditionally from last two millennia. Because of its extensive variation in meteorology, topography and climate, enormity of flourishing flora is raising anywhere else on the surface of earth [2]. Research on plant based curing for different conditions was strengthened in the 20th century [1,4]. Investigation for new drugs or phytotherapy is emphasized further apart from identifying and documenting [5,6]. Based on the available scientific literature from past decades says that use of herbal medicine as an alternative or complementary therapy is of great importance for well-being [7].

Bridelia scandens is a large woody evergreen climber or straggling shrub with pendent branches armed with large deflexed spines (Fig.1 A). Leaves elliptic –oblong or ovate 2.5-10 x 1.2-5cm, subcoriaceous, glabrous above, pale pubescent beneath. Flowers are monoecious, greenish-yellow, in small dense axillary clusters or long spikes, often

subtended by stipular hairy obliquely tanceolate acute bracts (Fig.1 A, B). Calyx 5mm long, hairy, Segments are triangular-ovate, acute, connate at base, crenulated at apex. Staminal column is 3m long, top anthers, styles with long slender arms. Drupes are 9mm long or more, ellipsoid-oblong seated on the slightly enlarged calyx and is black juicy when ripened [8]. It is disturbed in India and Southeast Asia. In India it has spread throughout in the dense evergreen forests of Western Ghats [9].

1.1 Traditional Claims

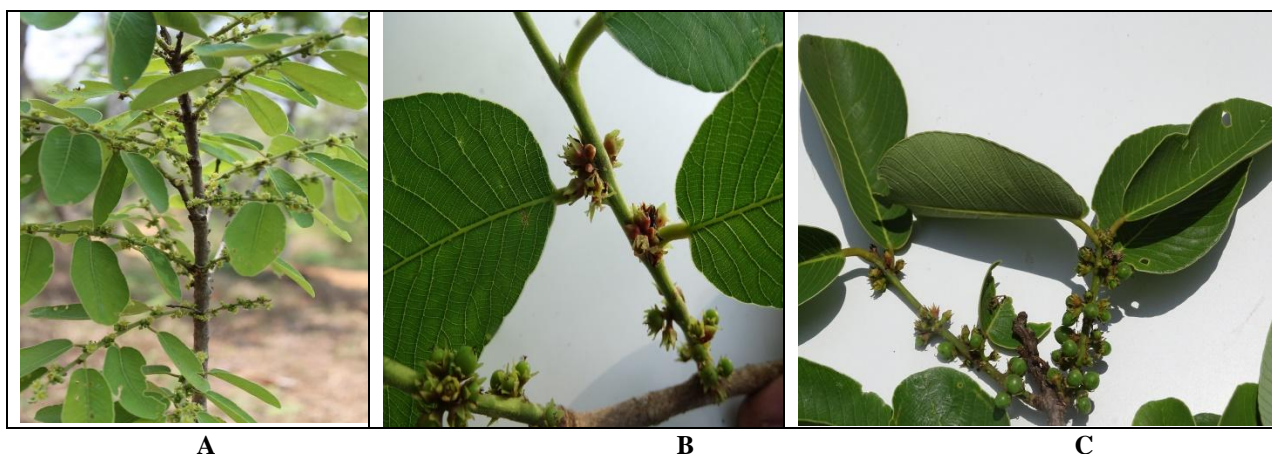
Bark decoction of *B.Scandens* is used for cough, fever and asthma [11,12] and jaundice [13, 14]. Decoction of wood of *B.Scandens* administered orally to treat malaria disease [15]. Leaf extracts are used to treatment of jaundice [12,16,17], allergy [18,19,12] inflammation, scabies, dermatitis [20] and anaemia due to pregnancy [12]. Leaf powder and warm leaf poultice are applied to white spots in the skin [12]. Root extract along with the combination for other plant is used to treat herpes [21]. Fruits are edible, yield a black coloring matter [22].

Taxonomy

Kingdom	<i>Plantae</i>
Class	Magnoliopsida
Order	Malpighiales
Family	Euphorbiaceae
Genus	<i>Bridelia</i>
Species	<i>Scandens</i>

Vernacular names [10]

Kannada	Akshathe Bali, Bisila Balli
Telugu	Chiriaannem, Dhantiboora, Siri aannem
Bengali	Harinhara,
Hindi	Kangiabel
Malayalam	Cheruka, Panchi.
Marathi	Asana, Kantakauchi, Kutki
Orissa	Gaurkars

**Fig .1** *Bridelia scandens***1.2 Chemical Constituents**

Tannins were isolated from the bark of *B.scandens* [23], fatty alcohol called bridely alcohol and phlobatannin was isolated from leaves [24], taraxenone and taraxenone was from roots [25] till date.

1.3 Antimicrobial Activity

Antimicrobial activity were screened for different extracts of stem bark and leaf of *B.scandens* against various gram positive and gram negative bacteria, wherein the methanolic extract exhibited the highest zone of inhibition of 23mm against *Staphylococcus aureus* and lowest of 11.9mm. Antifungal screening of *B.scandens* against *Aspergillus niger*, *Candida albicans*, and *Saccharomyces cerevisiae* for various extracts ranges between 9 to 17.5mg [26]. Inhibitory effect of the leaves and fruit extracts of *B.scandens* on *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Salmonella typhi*, *Shigella flexneri* *Vibrio cholera* was studied by time kill assay and MIC was also evaluated. This illustrates that *B.scandens* can be used as source of antimicrobial agent against pathogenic bacteria. [27].

1.4 Antioxidant Activity

In vitro antioxidant potential of various extracts of whole plant of *B. scandens* was determined by different models

hydroxyl radical scavenging, nitric oxide, and total phenol content. Whereas IC₅₀ value for methanolic extract found to be more effective (50µg/ml) in hydroxyl radical and nitric oxide (130µg/ml) scavenging than petroleum ether and ethyl acetate extracts. Compare to all extracts and standard, methanolic extract showed better results in scavenging activity. It also showed considerable amount of phenolic content (4.80±0.039mg/g of catechol), which attributes for its antioxidant activity [9].

1.5 Antihepatotoxic Activity

In vivo antioxidant activity and lipid peroxidation was evaluated for various solvent extracts (300mg/kg body weight) of whole plant of *Bridelia Scandens* in CCl₄ induced rats. Methanolic extract of *B. scandens* in CCl₄ treated rats reduced the concentration of TBRAS, when compared with CCl₄ treated rats. Administration of methanolic extract of *B. scandens* in CCl₄ treated rats showed significant (p<0.001) increase in the levels of antioxidant enzymes like superoxide dismutase(SOD), Catalase(CAT), Glutathione peroxidase, Glutathione reductase and reduced the level of non-enzymatic antioxidant glutathione. Methanolic extract of *B.scandens* showed a significant antioxidant property, helpful in preventing various oxidative stresses [28].

1.6 Antidiabetic Activity

Alcoholic leaf extract of *B.scandens* (200 & 400mg/kg body weight) was evaluated for its antidiabetic property in streptozotocin induced rats. Blood glucose level was determined by GOD-POD kit method and was compared with the oral dose of 0.6mg/kg Glibenclamide. Alcoholic extract significantly lowered blood glucose in dose dependent manner compared to standard drug glibenclamide [29].

2. CONCLUSION

Bridelia scandens is used by few tribes of Western Ghats to cure many ailments, which forms a basis to carry out the research activity. Different parts of *B. scandens* are being used in the traditional system of medicine to cure various illness of human kind. Researchers have confirmed it for few pharmacological abilities of *B.scandens* and proved to be safe. In future attempt has to be done to prove all the traditional potentials of *B.scandens*

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