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Combretum albidum G. Don: An unexplored medicinal plant

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Abstract

Many plants consists chemical compounds which consist good medicinal values. Every medicinal system uses those medicinal plants for the treatment of diseases. Main obstacle in the use of these plants is to purify these chemical compounds from the plants for their medicinal use. *Combretum albidum* G. Don is one of rare medicinal plant which used from the ancient times for its medicinal values. *Combretum albidum* belongs from the family Combretaceae. The phytochemical, phytochemical screening and microscopical estimation suggest many important chemical compounds from the different parts of the plants. So, the further study on its chemical constituents and pharmacological activity plays an important role in the medicinal field.

Keywords: *Combretum albidum*, medicinal plant, pharmacological

1. Introduction

Natural sources had been used in many medicinal systems from years. There are so many medicinal plants available in many countries for the treatment of different disease conditions and many plants have many chemical compounds which show medicinal values [1]. *Combretum albidum* of many useful plants have many chemical constituents have very good potential for treatment of many diseases. *Combretum albidum* belongs from the family Combretaceae [2]. *Combretum albidum* is also known as Manjakody or Buffalo calf. It is large woody climbers, deciduous shrub; upto 30 m height, its distribution is restricted to semi-green and delicious forests. *Combretum albidum* used to treat various ailments by rural villagers of different parts of Mharastra, Kerela and Tamil Nadu. Some people of Muthuvans, Kerela, Chinnar tribe used plant stem bark for Jaundice [3]. its physicochemical parameters are also reported [4]. Plant leaves are reported to cure wounds and cuts; seed oil and root are reported to cure eye problems, malarial fever and eczema. The pharmacognostica and phytochemical screening of the plant already reported by many researchers [5]. Till date there is no review article published on *Combretum albidum* G. Don. In this context we have deliberated various aspects of *Combretum albidum* G. Don plant which will be helpful for other researchers and Scientists for Further studies.

2. Taxonomic Classification

Kingdom: Plantae
Phylum: Tracheophyta
Class: Magnoliopsida
Order: Myrtales
Family: Combretaceae
Genus: Combretum [6].

3. Vernacular Names

English: Buffalo Calf Plant
Malayalam: Manjakody
Marathi: Piloccha, Piluki, Pewar wel
Tamil: Vennangukodi, Odaikodi, Verragay
Telugu: Yada-tige, Putagi, Shirtal Boddi [6].

4. Plant Description

Leaves: 7-10 X 5-6.5 cm, ovate and Orbicular

Flowers: Yellow, 4-lobes, Triangular, petals 1.5 mm

Fruits: Red, 2 x 2 cm, 4-winged^[6].

5. Distribution: Along river banks of peninsular India and Sri

Lanka in restricted semi-evergreen and deciduous forests^[7]

6. Chemical Constituents

Different parts of *Combretum albidum* contain different types of chemical constituents. Some of parts with their chemical constituent are mentioned in the table 1.

Table 1: Chemical composition of plant *Combretum albidum*

| Part | Chemical constituents | References |
|------------|---|------------|
| Leaves | Sesquiterpenes, monoterpenes, germacrene-D, E-nerolidol, tau.-muurolol, Caryophyllene, b-phellandrene, phytol | 3,8 |
| Roots | Glycosides, carbohydrate, flavonoid, phytosterols, Phenolic compounds and saponin. | 1 |
| Heart Wood | oleanolic acid, arjunolic acid, arjunolic acid, ellagic acid, beta sitosterol, Ursolic acid, betulinic acid, betulin, | 5 |
| Stem Bark | Lignin, tannin, oil, starch grains, tannis, flavonoids, triterpenes | 3 |

7. Pharmacological activities

7.1. Antimicrobial activity

Antimicrobial activity of aqueous and methanol extracts of stem bark of *Combretum albidum* was studied on different bacterial cultures by agar disc diffusion as well as agar well diffusion method. The results showed significant antibacterial activity against some bacterial cultures^[9].

7.2. Antioxidant activity

Antioxidant activity of *Combretum albidum leaves oil* was evaluated by DPPH assay and showed significant results in the radical scavenging assay hence suggested for its antioxidant activity^[8].

7.3. Hepatoprotective activity

The ethanolic extract of the plant of *Combretum albidum* was studied for its Hepatoprotective activity by determine different parameters and histopathological studies. The results showed significant improvement in all the parameters and histopathological studies showed improvement in liver regeneration in CCl₄-induced hepatotoxicity in rats. Hence results suggested that the ethanolic extract of the plant have good Hepatoprotective activity^[11].

7.4. Anti-bacterial activity

- Ethanolic extracts of leaves of different plants were evaluated for their antibacterial activity against NDM-1 *E. coli* strain, plants showed antibacterial activity then tested for minimum inhibitory concentrations and zone of inhibition showed potent antibacterial activity^[12].
- Essential oil of the leaves of plant *Combretum albidum* was studied for its antioxidant and antibacterial activity. The antibacterial activity was determined with the zone of inhibition method and found that essential oil are active against *S. aureus*, *E. coli*, *C. albicans*, and *S. typhi*^[9].
- The antibacterial activity of leaves methanolic extract of *Combretum albidum* was studied and in results it was observed that the ethanolic extract of leaves and ceftriaxone showed significant result in drug sensitivity and showed significant MIC minimum inhibitory concentration for bacteria as well. Hence suggested to have a good efficacy against MDR bacteria^[10].

8. Ethno-pharmacological uses

1. *Combretum albidum* G. Don Leaves are used for jaundice and its bark for skin diseases^[13].
2. Fruit decoction is used for treating dysentery and diarrhea^[14].
3. Its stem, seed oil and roots are reported to cure eye problems, eczema and malarial fever^[15]

9. Conclusion

From different herbal plant available in different parts of many countries *Combretum albidum* is also a useful plant which consist many medicinal purposes. It had been used from long time for medicinal purposes from the tribal people. The different parts of the plant consists many important chemical constituent for its medicinal values. Many researches work on the plant activity and well as screening of chemical constituents of the plant. This article plays important role for the further researchers to gather the information of the plant.

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