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Preliminary phytochemical screening of the pericarp of *Crataeva magna* (Lour.) DC. – a medicinal tree

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ABSTRACT

Objective: To examine the phytochemicals present in the pericarp of *Crataeva magna* (*C. magna*) (Lour.) DC. which is used as a traditional medicine by the inhabitants of Kanyakumari district. **Methods:** Phytochemical screening of the pericarp was done to determine the secondary metabolites in various solvents studied. **Results:** The phytochemical screening on the pericarp of *C. magna* (Lour.) DC. proved the presence of phytochemicals such as phenols, saponins and tannins. **Conclusions:** The findings of the present study recommended that the pericarp of *C. magna* (Lour.) DC. have potential antimicrobial compounds that may be of use for developing plant based drugs for various ailments.

1. Introduction

Plants have been used in traditional therapeutic practices for the treatment of different types of ailments since ancient times[1-5]. During the last century, the practice of herbalism became popular throughout the world. In spite of the great advances achieved in contemporary medicine, plants still make a significant contribution to health care. This is due to the recognition of the value of traditional medicinal systems. *Crataeva magna* (Lour.) (*C. magna*) DC. (family: Capparidaceae) is a widely used tree in traditional medicinal system. Bark juice of this plant is given orally to prevent childhood diseases among the inhabitants of the Kanyakumari district. Ethnobotanical studies reported that the leaf paste of *C. magna* is applied externally on piles and the juice is drunk to get relief from bleeding piles[6,7]; decoction along with the plant of *Boerhaavia diffusa* is given orally during inflammation; bark and roots are used for urinary disorder, fever, vomiting and gastric problems[8]; stem bark paste mixed with powdered black pepper is taken twice daily with honey to cure infantile diarrhoea[9]. Having immense ethnobotanical uses, the literature survey indicates that there was no experimental study on *C. magna* and hence the present study has been taken to analyze its phytochemical constituents.

2. Collection and identification of plant material

The fruits of *C. magna* were collected from Mylaudy hillock of Kanyakumari district during the month of Febuary-2011. The plant was identified by Dr S. Jeeva, Centre for Biodiversity and Biotechnology, Department of Botany, Nesamony Memorial Christian College, Marthandam, Kanyakumari, Tamilnadu, India. The voucher specimen was deposited at the Department for further reference.

3. Extract preparation and phytochemical screening

The pericarp of the freshly collected fruits were subjected to dried in shade, then coarsely powdered. For extraction of crude phytochemical, 5 g of powdered leaf material was kept in closed conical flask with 20 mL various solvents like acetone, benzene, chloroform, ethanol, petroleum ether

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Table 1
Preliminary phytochemical screening of the pericarp of *Crataeva magna*.

Phytochemical constituents	Acetone	Benzene	Chloroform	Ethanol	Petroleum Ether	H_2O
Alkaloids	−	−	−	−	−	−
Phenol	+	+	++	++	++	+++
Flavonoids	−	−	++	+++	−	−
Saponins	−	+++	+++	−	+++	−
Protein	−	−	−	−	−	−
Quinone	−	−	−	−	−	−
Steroids	−	−	−	−	−	−
Tannin	+++	−	−	++	−	++
Xanthoprotein	−	−	−	−	−	−
Carboxylic acid	−	−	−	−	−	−
Coumarins	−	−	++	++	−	+++
Carbohydrates	+++	−	++	+++	−	+++

(−) absent; (+) low; (++) average; (+++) high.

and distilled water in a shaker at room temperature for 24 h. After incubation, the extracts were filtered through Whatman No. 41 filter paper and the extracts were collected and stored in the refrigerator at 4 ℃. All the extracts were subjected to preliminary phytochemical screening as per the methods given by Harborne [10]. There is no previously isolated compounds.

4. Results

Reported in Table 1. The phytochemical studies revealed the presence of phytoconstituents like flavonoids, phenols, saponin, tannin, coumarin and carbohydrates.

5. Conclusion

C. magna is commonly found in Kanyakumari district and used in traditional medicine for curing various ailments. The presence of wide range of phytochemical constituents indicates that plant could serve as pilot for the development of novel agents for various pathological disorders. However, less information is available regarding chemical constituents and bioactivity of this ethnomedicinally important species. Further studies regarding isolation and purification of active phytoconstituents with broad spectrum of antimicrobial activity is under study.

Conflict of interest statement

We declare that we have no conflict of interest.

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