



COMPARATIVE PHYTOCHEMICAL SCREENING OF FLOWERS OF *PLUMERIA ALBA* AND *PLUMERIA RUBRA*

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ABSTRACT

Since ancient times, plants have been an exemplary source of medicine. Research conducted in last few decades on the plant mentioned in ancient literature or used traditionally. *Plumeria alba* and *plumeria rubra* are such plants that has been frequently used as medicine which belongs to the genus *plumeria* and family Apocynaceae. *Plumeria alba* Linn (Apocynaceae) is used in the treatment of ulcers, herpes, scabies and seeds possess haemostatic properties. The bark is bruised as plaster over hard tumours. *Plumeria rubra* are used for the treatment of venereal disease and also used in the indigenous system of medicine for the treatment of rheumatism, diarrhoea, blennorrhoea and leprosy. The present study summarizes the comparative preliminary phytochemical screening study of Flowers of *plumeria alba* and *plumeria rubra*.

Keywords: Apocynaceae, Phytochemical, *Plumeria alba*, *Plumeria rubra*.

INTRODUCTION

Plumeria alba Linn (Apocynaceae) commonly called White Champa, a small laticiferous tree or shrub, native of tropical America. It is 4.5m high, occasionally grown in the gardens. The plant is mainly grown for its ornamental and fragrant flowers. Leaves lanceolate to oblanceolate, flowers white, fragrant in corymbose fascicles¹. The fruit is edible, latex is applied to ulcers, herpes and scabies and seeds possess haemostatic properties. Moreover its bark is bruised and applied as plaster over hard tumours^{2, 3}. Whereas the latter taxon finds use as purgative, cardiotonic, diuretic and hypotensive^{4, 5}. Methanolic extract showed antimicrobial activity against *Bacillus anthracis*, *Pseudomonas aeruginosa*⁶. The plant is reported to contain amyrrinacetate, mixture of amyrrins, β -sitosterol, scopotetin, the iridoids isoplumericin, plumieride, plumieride coumerate and plumieride coumerate glucoside^{7, 8}.

Plumeria rubra (Hindi name: Lal champa; English: True Frangipani) belonging to Family Apocynaceae. Genus *Plumeria* belongs to the apocynaceae family and have laticiferous trees and shrubs; native of tropical America. *Plumeria* plants are famous for their attractiveness and a fragrant flower. The fruit is reported to be eaten in West Indies. In India, however, it has been used as an abortifacient. The flowers are aromatic and bechic and widely used in pectoral syrups. The essential oils from the flowers used for perfumery and aromatherapy purposes⁹. The flowers decoction of *P. rubra* was reported to use in Mexico for control of diabetes mellitus. The Leaves of *P. rubra* are used in ulcers, leprosy, inflammations and rubefacient¹⁰. The fresh leaves and bark contain plumieride, resinic acid, fulvoplumerin, a mixture of terpenoids and sterols and large

quantities of plumieride. The bark contains the cytotoxic iridoids, fulvoplumerin, allamcin, allamandin, 2,5-dimethoxy-p-benzoquinone, plumericin, and the lignan liriodenndrin.

MATERIALS AND MEHTODS

Plant material and chemicals

The fresh plant materials of were collected from Aurangabad, Dr. Rafiq Zakaria Campus, Y.B. Chavan College of Pharmacy (MS), India during the month of August 2009. The botanical identity of the plant was confirmed at the Botany department of Dr. BAMU, Aurangabad. A voucher specimen has been deposited at the Museum of the Department of Botany, Dr. BAMU, Aurangabad. All the reagent and chemicals used were procured from Dipa laboratory, Aurangabad and of analytical grade.

Extraction and isolation

The air Dried and milled flower (450g) of plant *P. alba* and *P. rubra* were continuously soxhlet extracted with Petroleum ether (60-80°C), chloroform and then with methanol (35 hrs, 70°C) and three extracts were proceed separately. Petroleum ether extract: Solvent was evaporated to give a yellow gummy material (14g) and waxy in nature. Chloroform extract: Solvent was evaporated to give a brownish black material (5g). Methanol extract: Solvent was evaporated to give a reddish semisolid material (6g).

Preliminary phytochemical screening

Preliminary Phytochemical screening was carried out by using standard procedures^{11, 12}.

Table 1: Preliminary Phytochemical Test for Extracts of Flower of *P. alba*

Extracts	Tannin	Carbohydrates	Gum	Protein	Steroid	Glycoside	Alkaloid	Flavonoid
Chloroform	-	-	-	-	+	-	-	-
Petroleum ether	-	-	+	-	+	-	+	+
Methanol	-	-	-	-	-	-	-	+

+: Present- : Absent

Table 2: Preliminary Phytochemical Tests for Extracts of Flower *P. rubra*

Extracts	Tannin	Carbohydrates	Gum	Protein	Steroid	Glycoside	Alkaloid	Flavonoid
Chloroform	-	-	-	-	-	+	-	-
Petroleum ether	-	+	-	-	+	-	-	-
Methanol	+	-	-	-	+	+	-	+

+: Present- : Absent

RESULT AND DISCUSSION

The preliminary phytochemical test was performed on the extracts of flowers of *P.alba* and *P.rubra*. They show the presence of steroid, alkaloid, flavonoid, glycoside, tannin and carbohydrates in extracts of Flower.

CONCLUSION

The preliminary phytochemical screening revealed the presence of Steroid, Flavonoid and alkaloid in extracts of flower of *P.alba* and Tannin, Carbohydrates, Glycosides, Steroid and Flavonoid in extracts of flower of *P.rubra*. Due to the presence of active phytochemical, plants can be used medicinally in future.

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