

Phytochemical screening of *Plumbago zeylanica*: A potent Herb

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Abstract: The results of the phytochemical screening carried out on *Plumbago zeylanica* leaf sample showed the existence of beneficial phytonutrients. The results showed that *Plumbago zeylanica* all six solvent extract contained reducing sugar, terpenoids, tannin, alkaloids and flavonoid. The results of the phytochemical screening on the three species of medicinal plants were discussed in relations to their usefulness to mankind.

Key words: *Plumbago zeylanica*, phytochemical screening, phytonutrients, Medicinal plant.

Introduction

Phytochemical is a natural bioactive compound found in plant that is formed during plant's normal metabolic process. These chemicals are often referred as "Secondary metabolites". That includes alkanoid, flavonoid, coumarins, gums, tannis, terpenes, phenols and so on. These phytochemicals originate in plant food material that works through nutrients and dietary fibre to defend body against diseases. Research recommends phytochemicals as essential dietary content that works together with nutrients originate in fruits, vegetables and nuts and these nutrients might help to slow the aging process and diminish the hazard of several diseases, counting cancer, heart disease, stroke, high blood pressure, cataracts, osteoporosis, and urinary tract infections.

Plumbago zeylanica, a rambling perennial herb or shrub (as some scientist refer it as shrub) of Plumbaginaceae family with *Plumbago* L. genus. There is lots of literature available that states the medicinal uses of *P. zeylanica*, a widespread curative herb all over Africa and Asia. It is used as a therapy for skin sicknesses, infections and intestinal worm's viz. leprosy, scabies, ringworm, hookworm, dermatitis, acne, sores and ulcers consequently in ancient times. The old systems of medicine in different parts of the regions have been using all amounts of *P. zeylanica* for a range of treatments. The whole plant has medicinal possessions but the root of chitrak has abundant therapeutic usages. Its Roots, bark and seed are used in variety of alignments. Paste made from roots of the plant is useful to the skin to treat abscesses, other skin diseases including ulcers and scabies [1,2] Several scientist consider that fever or malaria, rheumatism, intestinal parasites, anemia due to 'stagnant blood', internal and external trauma, toxic swelling and furunculosis scabies can be treated with this plant.[2,3,4,5]. Various pharmacological findings has indicated that *P. zeylanica* extract has s antiplasmodial [6], antimicrobial [7], antifungal [8], anti-inflammatory [9], antihyperglycemic [10], hypolipidaemic and antiatherosclerotic activities[11]. It is reported that it shows sufficient antidiarrheal[12], antiallergic[4], insecticidal, antidiabetic[10], hepatoprotective properties [13,14]

Material and Method

Collection: Plant *P. zeylanica* was collected from different tribes living in tribal pockets of Mt. Abu, arid zone of Rajasthan. These plants were used by these tribes in their daily lives to treat numerous illnesses.

Identification: Sample was authenticated and submitted to Ethnomedicinal Herbarium, Centre of Excellence funded by DST, JECRC, Jaipur (Rajasthan)

Preparation of test extracts: Crushed powders of species were successively Soxhlet extracted. Later, each of the homogenates was filtered and the residue was re-extracted twice for complete exhaustion, the extracts were cooled individually. Each filtrate was concentrated to dryness in vitro and re dissolved in respective solvents, were stored at 4°C in a refrigerator, until screened for phytochemical activity

Phytochemical Screening: Phytochemical screening was performed using standard procedure:

Test for Reducing sugar (Fehling's Test): The aqueous extract (0.5gm in 5 ml of water) was added to boiling Fehling's solution (A and B) in a test tube. The solution was observed for a colour reaction.

Test for Flavonoids: 4ml of extract solution was treated with 1.5ml of 50% methanol solution. The solution was warmed and metal magnesium was added. To this solution, 5-6 drops of concentrated Hydrochloric acid was added and red colour was observed for flavonoids and orange colour for flavones.

Test for Alkaloids: Alkaloids solutions produce white yellowish precipitate when a few drops of Mayer's reagents are added. Most alkaloids are precipitated from neutral or slightly acidic solution by Mayer's reagent. The alcoholic extract was heated on a boiling water bath with 2% hydrochloric acid. After cooling, the mixture was filtered and treated with a few drops of Mayer's reagent. The sample was then observed for the turbidity or

yellow precipitation.

Test for Tanins: About 0.5 g of extract was boiled in 10 ml of water in a test tube and then filtered. A few drops of 0.1% ferric chloride was added and observed for brownish green or a blue black colouration.

Test for Terpenoids (Salkowski Test): To 0.5 gm each of the extract was added to 2ml of chloroform. Concentrated sulphuric acid (3ml) was carefully added to form a layer. Reddish brown coloration of the interface indicates the presence of terpenoids.

RESULTS:

Phytochemical screening *Plumbago zeylanica* shows that the plant have abundant amount of Secondary metabolites in it. This following table shows the result of test performed.

Preliminary phytochemical screening of the plant *Plumbago zeylanica* leaf (chitrak) [(+ : present) (- : absent)]

Plant Extract	Reducing sugar	Flavonoids	Alkaloids	Tanins	Terpenoids
Pet.ether	+ve	+ve	+ve	+ve	+ve
Benzene	+ve	-ve	-ve	-ve	+ve
Chloroform	+ve	+ve	-ve	+ve	-ve
Ethyl acetate	+ve	+ve	+ve	+ve	+ve
Methanol	+ve	-ve	-ve	+ve	-ve
Distilled Water	+ve	+ve	+ve	-ve	+ve

DISCUSSION:

The above results shows that *Plumbago zeylanica* leaf show has potent phytochemical present in it. This finding support theory that states the presence of above phytochemicals in *Plumbago zeylanica* leaf.

ACKNOWLEDGEMENT:

Author acknowledge with thanks the financial support from Department of Science and Technology, Government of Rajasthan, in the form of Centre with Potentials for Excellence in Biotechnology, sanction no F 7(17) (9)Wipro/Gaprio/2006/7358-46(31/10/2008).

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