

Research Article

Preliminary Phytochemical Evaluation of *Phyllanthus niruri* *Psidium guajava* *Punica granatum*

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ABSTRACT

In the present study, an attempt was made to investigate Phytochemical evaluation of *Phyllanthus niruri* *Psidium guajava* *Punica granatum*. The crude power extract of the leaves of the above plant were taken for the study. The Phytochemical screening was done for the selected plants. phenolic compounds, tannins, flavonoids, glycosides,

Keywords: Phytochemical screening *Phyllanthus niruri* *Psidium guajava* *Punica granatum*.

INTRODUCTION

Herbal medicine also known as botanical medicine or phytomedicine-refers to using plants seeds, flowers, roots for medicinal purpose. Herbalism has a long tradition of use of outside of use of outside of conventional medicine. It is becoming more main stream as improvement in analysis and quality control along with advances in clinical research show the value of herbal medicine in the treating and preventing disease. The medicinal action of plants is unique to a particular plants species, consistent with the concept that the combination of secondary metabolites in a particular plants is taxonomically distinct for three medicinal plants and their description and uses respectively. Here in the present study three plants were taken and evaluated. The phytochemical constituents were studied by qualitative analysis for performing various chemical tests.

MATERIALS AND METHODS

Plant materials

The plants *Phyllanthus niruri* *Psidium guajava* *Punica granatum* were authenticated and collected from different parts of Andhra Pradesh.

Solvent Extraction

The leaves of *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris* were collected, washed, dried power of the leaves was weighed and transferred into a conical flask and it was macerated with sufficient amount of ethanol for about a week days. Process is repeated with water. The whole mixture was filtered and filtrate was collected, concentrated in a china dish on a hot plate till the residue was obtained. The extract was collected, labeled and stored for further experimental use. The extract and crude dried powders of *Phyllanthus niruri* *Psidium guajava* *Punica granatum* by performing various chemical tests.

TEST FOR CARBOHYDRATES

TEST	PROCEDURE
Molisch's Test	200mg of extract were dissolved separately in 5ml of water and filtered. 2ml of above sample solution is placed in a test tube. Two drops of Molisch reagent is added. The solution is then poured slowly into a tube containing 2ml of concentrated sulphuric acid and observed.
Fehling's Test	1ml of Fehling's solution A and Fehling's solution B were added to 100mg of extract separately. They were heated on boiling water bath for 5min and observed.
Benedict's Test	To the 150mg each extract, 2ml of Barfoed's reagent was added. then the mixture was heated on boiling water bath for 5min, cooled and observed.

TEST FOR ALKALOIDS

To 250mg of each extract, 10ml of dilute HCL was added, mixed and filtered. To the filtrate the following reagents were added and tested.

TEST	PROCEDURE
Wagner's Test	2ml of Wagner's reagent was to the above filtrate solution an observed.
Hager's Test	To the 2ml of above filtrate solution, 2ml of picric acid was added and observed.

TEST FOR GLYCOSIDES

The extract was tested for presence of

1. Saponin glycosides
2. Cardiac glycosides
3. Anthraquinone glycosides

TEST FOR SAPONIN GLYCOSIDES

TEST	PROCEDURE
Foam Test	To 200mg of each extract, 15ml of distilled water was added, shake it well and observed.

TEST FOR CARDIAC GLYCOSIDES

TEST	PROCEDURE
Legal's test	To 50mg of each extract, 1ml of pyridine, 1ml of sodium nitro prusside solution were added and observed.
Keller-Kiliani Test	To 50mg of each extract, 2ml of glacial acetic acid, 1ml FeCl ₃ solution were added, heated and then cooled. this was transferred to a test tube containing 2ml conc. H ₂ SO ₄ and observed.

TEST FOR ANTHRAQUINONE GLYCOSIDES

TEST	PROCEDURE
Borntrager's test	To 200g of each extract, dil. H ₂ SO ₄ was added and boiled. Then it was filtered and cooled. To the cold filtrate, 3ml of benzene was added and mixed. The benzene layer was separated and to it, ammonia (2ml) was added and ammonical layer was observed.

TEST FOR FLAVANOIDS

TEST	PROCEDURE
Lead Acetate Test	To the 100mg of each extract, lead acetate (5ml) was added and observed.

TEST FOR TANNINS

To 100mg of each extracted, the following reagent were added and observed.

- a) 5ml of 5% w/v FeCl₃ solution. b) 5ml acetic acid solution. c) 5ml dil. KMnO₄ solution.

TEST FOR STEROIDS

TEST	PROCEDURE
Salkowski Test	To 100mg of each extract, 2ml of CHCl ₃ , 2ml of conc. H ₂ SO ₄ were added, mixed thoroughly and both the layers were observed for color.
Lieberman Burchard Test	To 200mg of each extract, 5ml CHCl ₃ , 5ml acetic anhydride were added. Two drops of H ₂ SO ₄ was added from the sides of test tube and observed.

Table 1: Phytochemical Evaluation of *Phyllanthus niruri*

S.NO.	CHEMICAL TESTS	RESULTS
1.	TEST FOR CARBOHYDRATES	
	A. Molisch's test	+Ve
	B. Fehling's test	+Ve
	C. Benedict's test	+Ve
2.	TEST FOR ALKALOIDS	
	A. Hager's test	+ve
3.	TEST FOR FLAVANOIDS	
	A. Lead acetate Test	+ve
4.	TEST FOR SAPONINS	
	A. Foam Test	+ve
5.	TEST FOR CARDIAC GLYCOSIDES	
	A. Legal Test	+ve
6.	TEST FOR STEROIDS	
	A. Lieberman burchard test	-Ve
	B. Salkowski test	-Ve

Table 2: Phytochemical Evaluation of *psidium guajava*

S.NO	CHEMICAL TESTS	RESULTS
1.	TEST FOR CABOHYDRATES	
	A. Molisch's test	+ve
	B. Fehling's test	+ve
	C. Benedict's test	+ve
2.	TEST FOR ALKALOIDS	
	C. Hager's test	+ve
3.	TEST FOR FLAVANOIDS	
	Lead acetate test	+ve
4.	TEST FOR SAPONINS	
	Foam test	+ve
5.	TEST FOR STEROIDS	
	A. Lieberman burchard test	+ve
6.	TEST FOR CARDIAC GLYCOSIDE	
	A. Legal's test	-Ve
	B. Keller-killiani test	-Ve

Table 3: Phytochemical Evaluation of *Punica granatum*

S.NO	CHEMICAL TESTS	RESULTS
1.	TEST FOR CARBOHYDRATES	
	A. Molisch's test	+ve
	B. Fehling's test	+ve
	C. Benedict's test	+ve
2.	TEST FOR ALKALOIDS	
	A. Hager's test	+ve
3.	TEST FOR FLAVANOIDS	
	Lead acetate test	+ve
4.	TEST FOR SAPONINS	
	Form test	+ve
5.	TEST FOR STEROIDS	
	A. Liberman burchard test	+ve
6.	TEST FOR CARDIAC GLYCOSIDES	
	A. Legal's test	-ve
7.	TEST FOR ANTHRAQUINONE GLYCOSIDES	
	Borntrager's test	+ve

+ve=Positive -Ve = Negative

RESULTS AND DISCUSSION

The study of the chemical constituents and the active principles of the medicinal plants have acquired a lot of importance all over the world. The present study including the phytochemical screening of the plants. They were shade dried and powdered and were subjected to phytochemical screening. The dried powdered leaves *Phyllanthus niruri* *Psidium guajava* *Punica granatum* were subjected extracted separately. The qualitative chemical test for the extracts was performed. The screening showed that *Phyllanthus niruri* contains carbohydrates, flavanoids, glycosides, anthraquinone glycosides, and tannins. The screening showed that *Psidium guajava* possesses carbohydrates, flavanoids, alkaloids, glycosides and tannins. The screening showed that *Punica granatum* possesses carbohydrates, flavanoids and alkaloids. The results were given in tables.

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