

## Research Article

**Phytochemical Evaluation *Ocimum sanctum******Ocimum gratissimum* *Arevaria columnaris*****Bhavanam Indira priyadarshini<sup>1\*</sup>, Poonam Surya Pavani<sup>1</sup>****and A. Ravi Kumar<sup>1</sup> and Rizwana Shaik<sup>2</sup>**<sup>1</sup>Department of Pharmacognosy, Bapatla College of Pharmacy,  
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Bapatla-522 101, Andhra Pradesh, India.**ABSTRACT**

In the present study, an attempt was made to investigate phytochemical evaluation of *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris*. 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, cardiac glycosides, and alkaloids were present in *Ocimum sanctum*. Alkaloids, flavonoids, carbohydrates, glycosides and tannins were present in *Ocimum gratissimum*. Alkaloids, saponins, flavonoids, carbohydrates and anthraquinone glycosides were present in *Arevaria columnaris*.

Keywords: Phytochemical screening *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris*.

**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 *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris* 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.

Qualitative analysis for detection of carbohydrates, Alkaloids, cardiac anthraquinone, saponin, glycosides, flavonoids, tannins

The extract and crude dried powders of *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris* were subjected to qualitative analysis for presence of chemical constituents of *Ocimum sanctum* *Ocimum gratissimum* *Arevaria columnaris* 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 SAPONINE 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 <sub>3</sub> solution were added, heated and then cooled. this was transferred to a test tube containing 2ml conc. H <sub>2</sub> SO <sub>4</sub> and observed.

**TEST FOR ANTHRAQUINONE GLYCOSIDES**

TEST	PROCEDURE
Borntrager's test	To 200g of each extract, dil. H <sub>2</sub> SO <sub>4</sub> 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 FeCl<sub>3</sub> solution. b) 5ml acetic acid solution. c) 5ml dil. KMnO<sub>4</sub> solution.

**TEST FOR STEROIDS**

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

**Table 1: Phytochemical Evaluation of *ocimum sanctum***

S.NO.	CHEMICAL TESTS	RESULTS
1.	TEST FOR CARBOHYDRATES	
	A. Molish's Test	Positive
	B. Fehling's Test	Positive
	C. Benedict's Test	Positive
2.	D. Barfoed's Test	positive
	TEST FOR ALKALOIDS	
A.	Hager's Test	Positive
	B. Wagner's Test	Positive
3.	TEST FOR FLAVANOIDS	
	A. Lead acetate Test	Positive
4.	TEST FOR SAPONINS	
	A. Foam Test	Positive
5.	TEST FOR CARDIAC GLYCOSIDES	
	A. Legal Test	Positive
	B. Keller-killiani Test	Positive
6.	TEST FOR STEROIDS	
	A. Lieberman burchard test	Positive
	B. Salkowski test	Negative

**Table 2: Phytochemical Evaluation of *Ocimum gratissimum***

S.NO	Chemical Tests	Result
1.	TEST FOR CARBOHYDRATES	
	A. Molisch's test	Positive
	B. Fehling's test	Positive
	C. Benedict's test	Positive
2.	D. Barfoed's test	Positive
	TEST FOR ALKALOIDS	
A.	Hager's test	Positive
	B. Wagner's test	Positive
3.	TEST FOR FLAVANOIDS	
	Lead acetate test	Positive
4.	TEST FOR SAPONINS	
	Foam test	Positive
5.	TEST FOR STEROIDS	
	A. Lieberman burchard test	Positive
	B. Salkoski test	Positive
6.	TEST FOR CARDIAC GLYCOSIDE	
	A. Legal's test	Positive
	B. Keller-killiani test	Positive

**Table 3: Phytochemical Evaluation of *Arevaria columnaris***

S.NO	CHEMICAL TESTS	RESULT
1.	TEST FOR CARBOHYDRATES	
	A. Molisch's test	Positive
	B. Fehling's test	Positive
	C. Benedict's test	Positive
2.	D. Barfoed's test	Positive
	TEST FOR ALKALOIDS	
A.	Hager's test	Positive
	B. Wagner's test	Positive
3.	TEST FOR FLAVANOIDS	
	Lead acetate test	Positive
4.	TEST FOR SAPONINS	
	Form test	Positive
5.	TEST FOR STEROIDS	
	A. Liberman burchard test	Positive
	B. Salkowski test	Negative
6.	TEST FOR CARDIAC GLYCOSIDES	
	A. Legal's test	Negative
	B. Keller-killiani test	Negative
7.	TEST FOR ANTHRAQUINONE GLYCOSIDES	
	Borntrager's test	Positive

## 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 *Ocimum sanctum*, *Ocimum gratissimum*, *Arevaria columnaris*. They were collected and were authenticated. Then they were shade dried and powdered and were subjected to phytochemical screening. The dried powdered leaves of *Ocimum sanctum*, *Ocimum gratissimum*, *Arevaria columnaris* were subjected to extraction with ethanol separately. The qualitative chemical test for the ethanolic extracts were performed. The screening showed that *Ocimum sanctum* contains carbohydrates, flavanoids, cardiac glycosides, anthraquinone glycosides, saponins, steroids and tannins. The screening showed that *Ocimum gratissimum* possesses carbohydrates, flavanoids, alkaloids, steroids, cardiac glycosides and tannins. The screening showed that *Arevaria columnaris* possesses carbohydrates, flavanoids, saponins, steroids, and alkaloids. The results were given in Table-1, Table-2 and Table-3 respectively.

## CONCLUSION

The screening of phytochemical constituents of plants *Ocimum sanctum*, *Ocimum gratissimum*, *Arevaria columnaris* indicated the presence of carbohydrate, flavanoids, alkaloids and steroids in common. The plants contains more metabolites there is need for further investigations using fractionated extracts and purified chemical components.

Physicochemical constituents works on these plants are in progress.

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