

## PHYTOCHEMICAL OBSERVATIONS ON SOME SPECIES OF ANDROGRAPHIS WALL.

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**ABSTRACT:** Phytochemical studies of leaf of the herbs, *Andrographis paniculata* and *Andrographis lineata* (Acanthaceae) were carried out. Presence of phenolic compounds, flavonoids, alkaloids saponins and tannins and absence of steroids and triterpenoids have been reported there in this herbs for the first time.

### INTRODUCTION

*Andrographis alata* nees, *Andrographis paniculata* nees and *Andrographis lineata* nees are medicinal herbs, They are use as stomachic, tonic, blood purifier, anthelmintic antipyretic and anti-inflammatory (chopra et al., 1956; Tomar et al 1982; Balue et al., 1993; Balu and Alagesaboopathi., 1993).

The extract protects alcohol- induced toxic effect on liver tissues and accelerates intestinal digestion and absorption of carbohydrate (Roy choudhury and poddar, 1983). Andrographolide ( $C_{20}H_{30}O_5$ ), the main active bitter principal of *A. paniculata*, varies in quantity indifferent reports (Mokhtader and Guha-sircar, 1939; Qudrat-i Khuda et al., 1964 a,b Gaiind et al., 1963) The present investigation was under taken to study the phytochemicals.

### MATERIALS AND METHODS

Leaf samples of *A. alata*, *A. Paniculata* were collected during their pre-flowering period (November) and *A. lineata* during July form the shevaroy hills, Tamil Nadu and identified by comparing with the herbarium specimens of the madras herbarium (BSI,

Coimbatore) and the rapinate herbarium, tiruchirappali, *A. Alata* (MH-31428, RHT-22549); *A. lineata* (MH-26936. RHT-2619); *A. paniculata* (MH-13468, RHT-3305 the leaf of the plant materials were dried in shade and were subjected to soxhlet extraction using 50% ethyl alcohol for 12 hours. The extracts obtained were subjected to solvent evaporation by vacuum distillation and dried in a desiccator.

Dried and powdered leaf samples were tested for the availability of phytochemicals like steroids, alkaloids phenolic compounds tannins flavonoids, saponins and triterpenoids following standard methods (Johansen, 1940; Harborne 1973).

### Extraction, Isolation and testing methods:

20ml of filtered acidic solution of plant powders formed the test solution.

#### Steroids:

Tests solution as treated with minimum amount of  $CHCl_3$ . 3 drops of acetic anhydride and 2 drops of cons.  $H_2SO_4$  were added. The appearance of purple colour and its charges to blue or green will indicate the presence of steroids.

**Alkaloids:**

Test solution was taken with 2 NHCl. The aqueous layer formed was decanted and to which 1 or 2 drops of Mayer's reagent was added. The appearance of white turbidity or precipitate will denote the presence of alkaloids.

**Phenolic compounds:**

The alcoholic extract of the plant samples was treated with 1 drop of FeCl<sub>3</sub>. Intense blue to violet colour will denote the presence of phenolic compounds.

**Tannins:**

Water soluble portion of the extract was treated with few drops of lead acetate solution, the formation of white precipitate will denote the presence of tannins.

**Flavonoids:**

Test solution was treated with 1 gram of magnesium powder and 1 ml of conc. HCl and heated,

the development of orange colour will denote the presence of flavonoids.

**Saponins:**

The test solution was shaken well with water. The occurrence of foamy later will denote the presence of saponin.

**Triterpenoids:**

The test solution was shaken well with few drops of antimony trichloride solution. Appearance of blue precipitate denotes the presence of triterpenoids.

**RESULTS AND DISCUSSION**

The results of phytochemical tests carried out for *A. paniculata*, *A. alata* and *A. lineata* are presented in Table -1 In the present investigation *A. paniculata* for the availability phytochemicals. Phytochemical tests indicate the presence of phenolic compounds, flavonoids alkaloids, saponins and tannins, steroids and triterpenoids are absent in all the three species of *Andrographis*.

**Table -1****Phytochemical tests for *A. Paniculata*, *A. alata* and *A.lineata***

No.	Phytochemicals	<i>A.paniculata</i>	<i>A. alata</i>	<i>A.lineata</i>
1.	Phenolic compounds	+ (yellow)	+ (yellow)	+ (yellow)
2.	Flavonoids	+ (yellow)	+ (yellow)	+ (yellow)
3.	Alkaloids	+++ (Orange)	+ (Orange)	+ (Orange)
4.	Steroids	-	-	-
5.	Saponins	+	+	+
6.	Tanins	++	++	++
7.	Triterpinoids	-	-	-

+ denotes presence. - denotes absence

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