

Preliminary Phytochemical Screening of *Cassia Angustifolia*

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Abstract

In the present study, an attempt was made to investigate Phytochemical evaluation of different parts of *Cassia angustifolia*. The crude drug powder extracts of the leaves of the above plants were taken for the study. Phytochemical Screening was done for the selected plants.

Keywords

Phytochemical screening, *Cassia angustifolia*

INTRODUCTION

Herbal medicine, also known as botanical medicine or phytomedicine-refers to using plants seeds, flowers, roots for medicinal purposes. Herbalism has a long tradition of use outside of conventional medicine. It is becoming more mainstream as improvements in analysis and quality control along with advances in clinical research show the value of herbal medicine in treating and preventing disease. The medicinal action of plants is unique to a particular plant species, consistent with the concept that the combination of secondary metabolites in a particular plant is taxonomically distinct for three medicinal plants and their description and uses respectively.

EXPERIMENTAL SECTION

Plant Materials

The different parts of the plants *Cassia angustifolia* were authenticated by Mrs. N Deepa Ramani Associate Professor Nimra College of Pharmacy They were collected from different areas of NTR district of Andhra Pradesh.



Figure 1: A twig of *Cassia angustifolia*

Qualitative analysis Experimental Procedure
TEST FOR CARBOHYDRATES

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

TEST FOR ALKALOIDS

To 250 mg of each extract, 10 ml of diluted HCl was added, mixed, and filtered. To the filtrate the following reagents were added and evaluated.

TEST FOR GLYCOSIDES

The extract was evaluated for the presence of

- Saponin glycosides
- Cardiac glycosides

TEST FOR SAPONIN GLYCOSIDES

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

TEST FOR CARDIAC GLYCOSIDES

TEST	PROCEDURE
LEGAL'S TEST	To 50 mg of each extract, 1 ml of pyridine, 1 ml of Sodium nitro prusside solution were added and observed.
KELLER-KILIANI TEST	To 50 mg of each extract, 2 ml of glacial acetic acid, 1 ml FeCl ₃ solution was added, heated, and then cooled. This was transferred to a test tube containing 2ml conc. H ₂ SO ₄ and observed.

TEST FOR FLAVANOIDS

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

TEST FOR TANNINS

To 100 mg of each extract, the following reagents were added and observed.

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

EVALUATE FOR STEROIDS

TEST	PROCEDURE
SALKOWSKI TEST	To 100 mg of each extract, 2 ml of CHCl ₃ , 2 ml of conc. H ₂ SO ₄ were added, mixed thoroughly and both the layers were observed for color.

Table 1: Phytochemical Evaluation of *Cassia angustifolia*

S.NO.	CHEMICAL TESTS	RESULT
	TEST FOR CARBOHYDRATES	
1	A. Molisch's test B. Fehling's test C. Benedict's test D. Barfoed's test	Positive

TEST FOR ALKALOIDS		
2	A. Hager's test	Positive
	B. Wagner's test	Positive
TEST FOR FLAVANOIDS		
3	Lead acetate test	Positive
TEST FOR SAPONINS		
4	A. Foam test	Negative
TEST FOR STEROIDS		
5	A. Lieberman burchard test	Positive
	B. Salkowski test	Not Done
TEST FOR CARDIAC GLYCOSIDES		
6	A. Legal test	Positive
	B. Keller-killiani test	Not Done

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 present study includes the phytochemical screening of various parts of plants of *Cassia angustifolia* the investigation showed that *Cassia angustifolia* contains carbohydrates, alkaloids, flavonoids, cardiac glycosides steroids and tannins as given in Tables.

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REFERENCES

- Parekh J, Karathia N and Chanda S. Evaluation of Antibacterial activity and Phytochemical Analysis of Bauhinia variegata L Bark African Journal of Biomedical Research. 2006; 9:53-56.
- Nikhil SB, Dambe PA, Ghongade DB and Goupale DC. Hydroalcoholic extraction of Mangifera indica (Leaves) by Soxhlet International of Pharmaceutical Sciences. 2010;2(1):30-32.
- Trease GE and Evans WC. Pharmacognosy, 11 th ed, Brailliar Tindall Can. Macmillian, London, 1989.
- Trease GE and Evans WC. Pharmacognosy, 13 th ed., Balliere Tindall, London.1987;61-62.
- Tosi B, Tirillini B, Donini A and Bruni A. International Journal of Pharmacognosy. 1995; 33:353- 355.
- Harborne JB. Phytochemical methods: A guide to modern techniques of plant analysis, third edition. London: Chapman and hall. 1998;107-108
- Chatopadyay. Antibacterial activity of Black Myrobalan Fruit of Terminalia chebula against uropathogen E coli Pharmacognosy Review. 2007; 11:212-215.
- Vaidyanath Iyer Thankamani. Anti-microbial activity of Alstonia scholaris Flowers; International Journal of Pharma Research and Development (IJPRD). 2011;3(4):172-178
- Khyade MS and Vaikos NP. Phytochemical Screening and Antibacterial activity of Leaves of Alstonia scholaris African journal of Biotechnology. 2009; 22:6434-6436.
- Wongseripatana S. Indole Alkaloids from the fruits of Alstonia scholaris Thia J Pharm Sci. 2004;28(3-4):173-180.
- Pullok K Mukherjee. Quality Control of Herbal Drugs; I- Edition. 2002;186-219,428,441,448
- Annapurna J. Antimicrobial activity of Ixora coccinea Leaves Fitoterapia. 2003; 74:291- 293.Vadivu R. Pharmacognostical Standardization of Leaves of Ixora coccinea Linn J Pharm Sci &Res. 2009;1:151-157.
- Zafar R Malhotra P Manohar SJ 1993 Occurance of anthraquinone derivatives in indigenous *Cassia* species –A Chemotaxonomic approach New Botany 20: 139-43.