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Research Article

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Primary phytochemical study of *Psoralea corylifolia* L. and *Caesulia axillaris* Roxb.

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ABSTRACT

Psoralea corylifolia Linn. (Leguminoseae) and Caesulia axillaris are a medicinal plant and having various therapeutic applications. In the present investigation both the plants has been evaluated for their phytochemical constituents. Phytochemicals are direct sources of pharmaceutical's important and so need to be evaluate the information from it. In concern with this, phytochemical study were designed for some secondary metabolites of Psoralea corylifolia L. and Caesulia axillaris Roxb, with Hexane, Chloroform and Methanol as a solvent system. Result of different plant parts that is Leaves(L), Stem(St) and Seed(S). Preliminary phytochemical study reveals that flavonoids in each plant part are present irrespective to solvents, while alkaloids are not detected in current experiments. Qualitative work is done for phytochemical information's of these two medicinal important plant.

Key words: Phytochemicals, *Caesulia axillaris*, Medicinal properties, secondary metabolites.

INTRODUCTION

Plant and its products has been used as medicine and it get incorporated into traditional and allopathic system of medicine for curing various diseases. As per WHO report 80% of world population, uses plant and its products as medicines for some aspect of primary health care [1]. They act as valuable life line for rural population in tribal's remote areas. These wild plants area are good resources for human life in many aspects [2]. *Psoralea corylifolia* Linn. Belonging to family of Leguminoseae is a well known herb known for its medicinal value in Siddha system of medicines to treat various diseases and commonly known as babchi, bearing yellow or bluish purple flowers and found throughout Indian plains, Pakistan, Srilanka, Burma and China [3]. Roots of *Psoralea corylifolia* Linn. are useful in dental caries, fruits are laxative, aphrodisiac, and are used for the treatment of leucoderma, leprosy and in inflammatory diseases of the skin and leaves are good for the treatment of diarrhea [4,5,6]. The most important biological constituent of plant alkaloids, tannins, flavonoids and phenolic compound [7]. A huge classes and type of phytochemicals belonging to several plant family and species have been shown to have inhibitory effects on many types of microorganisms [8]. This Knowledge of the phytochemical constituents of plants is important to design new drug's from such information and also value for synthesis of complex chemical substances [9]. The essential oils of *Caesulia axillaris* shows the fumigant activity in the management of biodeterioration of stored wheat samples by *Aspergillus flavus* and the insect pests, *Sitophilus oryzae* and *Tribolium castaneum*, at 1300 and 600 ppm, respectively. The oils also controlled the blue mould rot of oranges caused by *Penicillium italicum*. It is act as a

postharvest fungicides of higher plant origin. There is no literature found on phytochemistry of *Caesulia axillaris* [10].

EXPERIMENTAL SECTION

Plant Material

Fresh plant materials that is Leaves, stem and Seed of *Psorolia corylifolia* L. and *Caesulia axillaris* Roxb, were collected from different regions Jalgaon city side area. Collected plant materials were taxonomically identified and authenticated by botanical expert. The plant materials were shade dried until all the water molecules evaporated and plants became well dried for grinding. Dry plant material separately grind to a fine powder and stored for further experiment with proper labels.

Preparation of Extract

Dried powder of Leaves (L), Stem (St) and Seed (S) powder for each experimental plant was exhaustively extracted successively in soxhlet apparatus using Hexane, Chloroform and Methanol respectively. The solvents were removed by distillation and the last traces of solvent being removed under reduced pressure. The extracts were weighed and their percentage value was recorded and thereafter, was stored in refrigerator for further experimental work [11, 12].

Phytochemical analysis

The extractions was tested for the presence of bioactive compounds by using following standard methods [13, 14].

- **Test for alkaloids**: Crude extract was mixed with 2ml of 1% HCl and heated gently. Mayer's And Wagner's reagents were then added to the mixture. Turbidity of the resulting precipitate was taken as evidence for the presence of alkaloids [15].

- **Test for glycosides:**

Liebermann's test:Crude extract was mixed with each of 2ml of chloroform and 2ml of acetic acid. The mixture was cooled in ice. Carefully concentrated H_2SO_4 was added. A colour change from violet to blue to green indicated the presence of steroidal nucleus, i.e., glycine portion of glycoside.

Salkowski's test: To the 2 ml chloroform and 0.5 ml extract, concentrated H_2SO_4 was added from sides of the test tube to form lower layer, reddish–brown coloration at interface reveals the presence of steroids [14].

- **Test for flavonoid:** When dilute sodium hydroxide was added to 0.2 ml of extract creates intense yellow colour, which on addition of HCl turns colourless suggests presence of flavonoids [16].

- **Test for tannins:** Crude extract was mixed with 2ml of 2% solution of $FeCl_3$. A blue-green or black coloration indicated the presence of tannins [14, 17].

- **Test for phenolic:** Formation of intense green, purple, blue or black colour with addition of 1% ferric chloride solution to the extract [18].

- **Test for steroids**: 200mg plant material was taken in 10 ml chloroform and then filtered. In 2ml filtrate, 2ml acetic anhydride and small amount of H_2SO_4 was added, appearance of blue green ring indicates presence of steroids [19].

RESULTS AND DISCUSSION

The phytochemical composition of three different solvent and six test of two studied plant is summarized in table. Present investigation indicate that the leaves of the three study plants contain alkaloids, glycoside, flavonoids, tannins, steroids and phenols. These phytochemicals are known to be of therapeutic importance since they have active medicinal importance in pharmaceuticals. Observations indicate that the flavonoid is more prominently present in *Psoralea corylifolia* L. in all three solvent system followed by steroids and glycoside for leaves, stem and seed powder. *Caesulia axillaris* Roxb shows flavonoid in all three plant part in each solvent but least in methanolic solvent, while glycosides is absent except hexane solvent for leaves and stem. Alkaloids are absent in both plant test irrespective to different solvents system.

Table.1

Plant	***Psoralea corylifolia* L.**									***Caesulia axillaris* Roxb.**								
Extract	Hexane			Chloroform			Methanol			Hexane			Chloroform			Methanol		
Parts	**L**	**St**	**S**	**L**	**St**	**S**	**L**	**St**	**S**	**L**	**St**	**S**	**L**	**St**	**S**	**L**	**St**	**S**
Alkaloids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycoside	+	+	+	+	+	+	-	-	+	+	+	-	-	-	-	-	-	-
Flavonoids	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	-	+	-
Tannins	+	-	-	+	+	-	-	+	-	+	-	-	+	+	+	+	+	+
Phenols	+	+	+	+	-	-	+	-	+	+	-	+	-	-	-	+	-	+
Steroids	+	+	-	+	+	+	+	+	-	+	+	+	-	+	+	+	+	+

For any important pharmaceutical inventions and discovery of novel drugs, the essential information's regarding the chemical constituents are generally provided by the qualitative phytochemical screening of plant extracts. In the present study, qualitative tests for Psoralea *corylifolia* L. and *Caesulia axillaris* Roxb for six different secondary metabolites shows significant indication about the presence of active components. . Steroid and flavonoid were found to be present in the extracts of the leaves, stem and seeds of both the plants. While alkaloids, glycoside and others could not be detected in the extracts. These findings of phytochemicals were good enough to reflect its importance of these plant species. Both these plants can be used for further phytochemical analysis to inventions of new therapeutically valuable compounds.

CONCLUSION

Profiling of plant extracts in different solvent system confirms the presence of diverse group of phytochemicals. Authors revealed that the phytochemical composition varies with the solvent used within same sample. Hence, its important conclusion that based on work of interest, it is necessary to use the appropriate solvent for extraction and isolation of phytochemicals. This should be a critical step in further studies on the phytochemical study for further reporting of therapeutic importance.

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