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Phytochemical Analysis and Acute Toxicity Studies Of Methanolic Extract Of Stem Of *Dalbergia lanceolaria,* Flowers Of *Dendrobium normale* And Bark Of *Measa indica.*

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ABSTRACTS

The present work involves to check the presence or absence of the Phytochemical constituents in methanolic extracts of stems of *Dalbergia lanceolaria,* flowers of *Dendrobium normale,* and bark of *Measa indica* and Acute toxicity studies clearly indicated non-toxicity of the Ethanolic extracts at a dose of 2000 mg/kg.Hence there is no LD_{50} and the all extract tested are considered safe and nontoxic.

Keywords: *Dalbergia lanceolaria, Dendrobium normale, Measa indica,* Phytochemicals analysis, acute toxicity studies

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INTRODUCTION

Medicinal plants besides therapeutic agents are also a big source of information for a wide variety of chemical constituents which could be developed as drugs with precise selectivity. These are the reservoirs of potentially useful chemical compounds which could serve as newer leads and clues for modern drug design [1]. The most important of these bioactive constituents of plants are alkaloids, tannins, flavonoids and phenolic compounds [2]. Correlation between the phytoconstituents and the bioactivity of plant is desirable to know for the synthesis of compounds with specific activities to treat various health ailments and chronic diseases as well [3]. Owing to the significance in the above context, such preliminary phytochemical screening of plants is the need of the hour in order to discover and develop novel therapeutic agents with improved efficacy. Numerous research groups have also reported such studies throughout the world [4-8]. Thus, the present study deals with the screening based on phytochemical tests of three medicinal plants viz., stems of *Dalbergia lanceolaria,* flowers of *Dendrobium normale,* and bark of *Measa indica* for identifying their chemical constituents. All these plants possess different bioactivities which were later correlated with the presence of some specific phytoconstituents.

MATERIALS AND METHODS

Animals

Albino rats of either sex weighing between 200-250 g were obtained from Albino labs, Hyderabad. The animals were housed under standard environmental conditions (temperature of 22±1^0 C with an alternating 12 hrs light- dark cycle and relative humidity of 60±5%), one week before the start and also during the experiment as per the rules and regulations of the Institutional Ethical Committee and by animal regulatory body of the government.

Plant materials

The present study included plant species which were stems of *Dalbergia lanceolaria,* flowers of *Dendrobium normale,* and bark of *Measa indica*

Chemicals

Fehling solution A and Fehling solution B, ethanol, distill water, aqueous HCl, methanol, chloroform, concentrated sulphuric acid, Ammonia solution, picric acid, Hexane.

Sample collection

Ten medicinal plants were collected locally; the plants were used for the purpose of Their phytochemical analysis. The plants collected were identified botanically in department of Botany.

Preliminary Phytochemical Investigation

The extract was subjected to qualitative chemical investigations for identification of different phytoconstituents like sterols, glycosides, Saponins, carbohydrates, alkaloids, flavonoids, tannins, proteins and tri-terpenoids

Acute Toxicity Studies

The acute toxicity study was conducted for Ethanolic extracts of *Dalbergia lanceolaria, Dendrobium normale,* and *Measa indica* as per OECD guidelines 420 (OECD.2001).

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RESULT

Table: 1. phytochemical constituents present in methanolic extracts of stems of *Dalbergia lanceolaria,* flowers of *Dendrobium normale,* and bark of *Measa indica*

Phytoconstituents	*Dalbergia anceolaria*	*Dendrobium normale*	*Measa indica*
Alkaloids	+	+	+
Carbohydrates	-	+	-
Flavonoids	+	+	+
Glycosides	+	+	+
Phytosterols	+	+	+
Proteins& amino acids	-	-	-
Saponins	+	-	+
Tannins	-	-	-
Triterpenoids	+	+	+

+ = Present, – = Absent

Acute Toxicity Studies

The acute toxicity study was conducted for Ethanolic extracts of *Dalbergia lanceolaria, Dendrobium normale,* and *Measa indica* as per OECD guidelines 420 (OECD.2001).

Table: 2: Assessment of acute toxicity studies

Group	Name of Ethanolic Extract	Dose mg/kg b.w	No. of animals/group	Mortality	
				24hrs	72hrs
I	*Dalbergia lanceolaria*	5	3	0	0
II	*Dalbergia lanceolaria*	50	3	0	0
III	*Dalbergia lanceolaria*	300	3	0	0
IV	*Dalbergia lanceolaria*	2000	3	0	0
V	*Dendrobium normale*	5	3	0	0
VI	*Dendrobium normale*	50	3	0	0
VII	*Dendrobium normale*	300	3	0	0
VIII	*Dendrobium normale*	2000	3	0	0
IX	*Measa indica*	5	3	0	0
X	*Measa indica*	50	3	0	0
XI	*Measa indica*	300	3	0	0
XII	*Measa indica*	2000	3	0	0

DISCUSSION

Acute toxicity studies were performed for Ethanolic extracts according to the toxic classic method as per guidelines 423 prescribed by OECD, 2001. Albino rats were used for acute toxicity study. The animals were kept fasting for overnight and provided with water only. These were divided into groups each containing three animals. Each of these groups was then administered with Ethanolic extracts of *Dalbergia lanceolaria, Dendrobium normale,* and *Measa indica*at the dose of 5mg/kg b.w p.o., 50mg/kg b.w p.o., and 300mg/kg b.w p.o. The animals were observed continuously after administration of the first dose for 30 minutes and then periodically for first 24 hours with special attention during the first 4 hrs and thereafter daily, for a total of 14 days. The observations like sedation, convulsions, tremors, salivation, lethargy, death etc are systematically recorded with individual records of each animal. Since no mortality was seen at the dose levels 5 mg, 50mg, 300mg and the procedure was repeated with higher dose of 2000mg/kg b.w in fresh animals.

CONCLUSION

The present investigation showed different Phytochemical constituents present in methanolic extracts of stems of *Dalbergia lanceolaria,* flowers of *Dendrobium normale,* and bark of *Measa indica and* Acute toxicity studies clearly indicated the selected three extracts showed neither visible sign of toxicity nor mortality (table). The results clearly indicated non-toxicity of the Ethanolic extracts at a dose of 2000 mg/kg.

From this, 1/20th 1/10th, and 1/5th and doses were selected for the experimental study. Hence there is no LD_{50} and all the extracts tested are considered safe and nontoxic.

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