ANTHELMINTIC ACTIVITY OF THE WHOLE PLANT OF BAUHINIA PURPUREA (Linn.)

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ABSTRACT
Aqueous and Ethanolic extracts from the whole plant of Bauhinia purpurea were investigated for their anthelmintic activity against Pheretima posthuma. Three concentrations (25, 50 and 100 mg/ml) of each extracts were studied in activity, which involved the determination of time of paralysis and time of death of the worm. Both the extracts exhibited significant anthelmintic activity at highest concentration of 100 mg/ml. Piperazine citrate in same concentration as that of extract was included as standard reference and normal saline water as control. The anthelmintic activity of aqueous and ethanolic extracts of Bauhinia purpurea has therefore been demonstrated for the first time.

Key words: Bauhinia purpurea, anthelmintic activity, Pheretima posthuma, Piperazine citrate.

INTRODUCTION
Helminthiasis, or worm infestation, is one of the most prevalent disease and one of the most serious public health problems in the world. Hundreds of millions if not billions of human infections by helminthes exist worldwide and increased world travel and immigration from the developing countries. Chemical control of helminthes coupled with improved management has been the important worm control strategy throughout the world. However, increasing problems of development of resistance in helminthes against anthelmintics have led to the proposal of screening medicinal plants for their anthelmintic activity.

Bauhinia purpurea (Linn. (Fam. Fabaceae) is a flowering plant native to South China and southeastern Asia. In the United States of America, the tree grows in Hawaii, coastal California, southern Texas and southwest Florida. Common names include Hong Kong Orchid Tree, Purple camel’s foot, and Hawaiian orchid tree. It is a small to medium-sized deciduous tree growing to 17 m tall. The investigation of chemical constituents of plants of the Fabaceae family has aroused considerable attention on account of the antitumor activities found in dibenzoxepins named bauhiniastatins 1-4 triterpenes isolated from Bauhinia purpurea 1.

In previous papers we described the chemical constitution of the isolated two new dimeric flavonoids from 70%aq. Acetone extract of Bauhinia purpurea leaves and phytol fatty esters, lutein, and β-sitosterol with Antifungal activity. α – Amyrin Caprylate was isolated from ethanolic extract of leaf of Bauhinia purpurea. The ethanolic extract of leaf of Bauhinia purpurea showed antioxidant activity. Present work was undertaken to evaluate traditional anthelmintic property of the whole plant of Bauhinia purpurea.

MATERIAL AND METHODS
Plant material
The plant specimens for the proposed study were collected from Bhilai, Chhattisgarh, India during July 2010 and its botanical identification was confirmed by Dr. S. Panda, Associate Professor, Department of Botany, Govt. Art & Science College Durg, Chhattisgarh. A Voucher specimen was deposited in Department of Botany, Govt. Art & Science College Durg, Chhattisgarh.

Preparation of Extract
The whole plant of Bauhinia purpurea were shade dried, crushed to produce coarse powder and subjected to extraction in Soxhlet extractor using ethanol (95%). The extract was filtered while hot and concentrated by vacuum which is further evaporated to dryness to obtain alcoholic extract and stored at 4°C until used. Aqueous extract were obtained by maceration for 24 hours. The extract was double filtered by using muslin cloth and Whatman no.1 filter paper and concentrated by evaporation on water bath.

RESULTS AND DISCUSSION
Data in the Table 1 reveals that aqueous and ethanolic extracts of Bauhinia purpurea showed significant anthelmintic activity at all the concentrations. The ethanolic extract showed more significant effect on paralyzing the worms, in terms of paralysis time, at every concentration compared to that of aqueous extract when compared with standard.

DISCUSSION
The plant Bauhinia purpurea (Linn.) has received considerable attention on account of the antitumor activities found in dibenzoxepins named bauhiniastatins 1-4 triterpenes isolated from Bauhinia purpurea 1. The investigation of chemical constituents of plants of the Fabaceae family has aroused considerable attention on account of the antitumor activities found in dibenzoxepins named bauhiniastatins 1-4 triterpenes isolated from Bauhinia purpurea 1. The investigation of chemical constituents of plants of the Fabaceae family has aroused considerable attention on account of the antitumor activities found in dibenzoxepins named bauhiniastatins 1-4 triterpenes isolated from Bauhinia purpurea 1. The investigation of chemical constituents of plants of the Fabaceae family has aroused considerable attention on account of the antitumor activities found in dibenzoxepins named bauhiniastatins 1-4 triterpenes isolated from Bauhinia purpurea 1.

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Table 1: Anthelmintic activity of aqueous and ethanolic extracts of whole plant of *B. purpurea* linn.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Concentration (mg/ml)</th>
<th>Time taken for paralysis (min)</th>
<th>Time taken for death (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (Normal Saline)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piperazine citrate (Standard)</td>
<td>25</td>
<td>27±0.4</td>
<td>33±0.8</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>20±0.9</td>
<td>28±0.4</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>13±0.5</td>
<td>20±0.4</td>
</tr>
<tr>
<td>Aqueous extract</td>
<td>25</td>
<td>65±0.8</td>
<td>96±0.1</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>45±0.1</td>
<td>59±0.6</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>32±0.2</td>
<td>45±0.4</td>
</tr>
<tr>
<td>Ethanolic extract</td>
<td>25</td>
<td>50±0.2</td>
<td>64±0.5</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>36±0.6</td>
<td>49±0.3</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>30±0.6</td>
<td>44±0.4</td>
</tr>
</tbody>
</table>

All Values represent Mean± SD; n=6 in each group. Comparisons made between standard versus treated groups.

**CONCLUSION**

It could be concluded and confirmed that the aqueous and ethanolic extracts of whole plant of *B. Purpurea* has anthelmintic activity comparable with standard drugs, which is effective against parasitic infections of humans. Further, in future it is necessary to identify and isolate the possible active phytoconstituents responsible for the anthelmintic activity and study its pharmacological actions.

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**REFERENCES**