Anti-Microbial Activities and Phytochemical Screening of the Premna Odorata Blanco (Alagaw) Leaf Extract

Bernadette C. Mollejon, Charito V. Mollejon

Department of Physical Sciences, College of Science, University of Eastern Philippines, University Town, Catarman, Northern Samar, Philippines

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ABSTRACT

The researcher focused mainly to determine the antimicrobial properties and phytochemical screening of the Alagaw leaf extract. Specifically, this study was conducted to determine the percent yield, antimicrobial activities and the secondary metabolites of Alagaw leaf extract which was analyzed and it include alkaloid, anthraquione, saponins and steroid. Findings of the study showed that the Alagaw leaf extract has a percent yield of 11.5%. Anti-Microbial Activity was tested by petri disk on a plate Nutrient Agar streaked with the E. coli bacteria, the plates were incubated for 24hrs and 370C. Results were observed for the presence of zone inhibition (clear area) around the test disk. Results from this study showed that the antimicrobial activity on E. coli as indicated as negative by the presence of Alagaw leaf extract. Furthermore, the result suggests that the Alagaw leaf extract did not suppress the growth of the E. coli bacteria, hence it indicates that it has no anti-microbial effect to the test organism. While the secondary metabolites such as alkaloid, anthraquione, saponins and steroid is found negative. It is therefore recommended that further study of the chemical properties of Alagaw leaf extract, barks and roots should be conducted.

INTRODUCTION

To achieve mastery over the powerful forces of nature, man has always turned to plants. It gives shelter, food, materials to make our clothing etc. Our environment is surrounded by different kinds of plants. These served as our refuge in different kinds of pollution. Plants' used for natural healing is a common practice in specially areas. Substances that are being metabolized in the seed, root, items,

Premna odorata Blanco was one of the healing plants for Worldwide, cancer causes more deaths than AIDS, tuberculosis and malaria combined although several anti-cancer drugs already commercially available, a number of adverse effects sometimes occur during chemotherapy. To reduce this unwanted effect many chemotherapeutic agents in the clinic are derived from natural products or designed on the basis of original compounds found in natural product. In the search new cancer chemo preventive agents from natural sources, This research was directed towards the screening of plants with antitumorigenic activity in the micronucleus test (MT) based on the method of schmid, MT is highly sensitive in vivo test designed to detect carcinogenic effects. In addition, this study also focused on the isolation and characterization of the antitumorigenic expressions of the plant identified with highest activity using a bioassay directed scheme. As a part of systematic investigation of identifying bioactive compounds from Philippine plant extract was subjected to different investigator: Initiated screen at the institute of chemistry and cell Biology (ICCB) Screening Facility at Harvard Medical School. The selected plants that were selected to the preliminary screening for bioactivity in MT included Premna Odorata Blanco. These plants were chosen since they were among the few plant extract gave positive results in various assays from the Philippine plant extract libraries deposited at the ICCB. The literature search revealed that iridoid glycosides were isolated from Premna Odorata Blanco.

METHODOLOGY

Calculate the percent yield of the mass of crude extract of leaf over the volume of the leaf extract multiply by one hundred (100) of Premna Odorata Blanco (Alagaw) leaf extract using the formula:

\[
\text{% yield} = \frac{\text{mass of extract}}{\text{volume of extract}} \times 100
\]

Test for the presence of alkaloid

In this test the Dragendorff's reagent and Mayer's reagent was used to test the presence of alkaloid in leaf extract of Premna Odorata Blanco. From cold extract it was separated.
Table 1. Summary on Phytochemical screening Tests

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>Leaf Extract</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkaloid</td>
<td>No Orange precipitate form when treated with Dragendorff’s reagent and no white precipitate with Mayer's reagent</td>
<td>Negative</td>
</tr>
<tr>
<td>Anthraquinone</td>
<td>All trials has no pink color observed</td>
<td>Negative</td>
</tr>
<tr>
<td>Saponin</td>
<td>Lower than in the other water tube containing water</td>
<td>Negative</td>
</tr>
<tr>
<td>Steroid</td>
<td>No production of range in colors from blue to green, red, pink, violet or purple</td>
<td>Negative</td>
</tr>
</tbody>
</table>

It is implicit that all trials in the secondary metabolites such as alkaloid, anthraquinone, steroid and saponin and steroid in alagaw extract is negative.

Table 2. Summary on Anti-Microbial Tests

<table>
<thead>
<tr>
<th></th>
<th>E. Coli Negative Control</th>
<th>Positive Control</th>
<th>Alagaw Extract</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trial 1 &amp; 3 is 20mm Inhibition and Trial 2 is 22 Inhibition</td>
<td>Trial 1 &amp; 3 is 6mm Inhibition and Trial 2 is no inhibition</td>
<td></td>
<td>Negative</td>
</tr>
</tbody>
</table>

The Anti-Microbial Property for the E. Coli bacteria tested was found negative in alagaw leaf Extract since the zone of inhibition was found to be less than 20mm as stated by Lalitha MK (2004).
CONCLUSIONS
Based on the results of the study, the following conclusions were drawn by the researcher: Alagaw leaf has 11.5% percent yield. Alagaw leaf extract does not contain secondary metabolites called alkaloid, steroid saponin, athraquinone. Even though there is a zone of inhibition, the alagaw extract has no antimicrobial resistance against E. coli.

References