

**ISOLATION AND ANTIDIABETIC ACTIVITY OF THE
CHEMICAL COMPONENTS FROM BIGNAI
LEAVES (ANTIDESMA BUNIUS)**

Research Study

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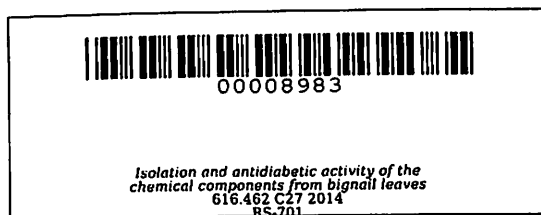
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**ISOLATION AND ANTIDIABETIC ACTIVITY OF THE CHEMICAL COMPONENTS
FROM BIGNAI LEAVES (*ANTIDESMA BUNIUS*)**

**A Research Study
Submitted to the Faculty of the
Science High School, College of Education
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ABSTRACT

CASPILLAN, RONALD MARI JERARD R., ERAÑA, CHRISTIAN EARLP., REYES, GIERONE LIANNI A. Isolation and Antidiabetic Activity of the chemical components from Bignai Leaves (*Antidesma bunius*). Research Study (General Science Curriculum), Science High School, College of Education, Cavite State University, Indang, Cavite, April 2014. Adviser: Mrs. Agnes Alimboyoguen

This study entitled “Isolation and Antidiabetic activity of the chemical components from Bignai Leaves (*Antidesma bunius*)” was conducted to: determine the physical properties of isolates from bignai in terms of color, odor, texture, and solubility; determine the phytochemical components from bignai and; test the antidiabetic activities of each component present in bignai.

The isolates were obtained using column chromatography and their physical properties were evaluated in terms of odor, color, texture and solubility. Phytochemical analysis was also determined by identifying the presence of glycosides, saponins, flavonoids and terpenoids from the bignai isolates. Furthermore, the antidiabetic activity was tested using the oral glucose tolerance test to the laboratory rats.

The findings revealed brown color from the 30%, 60%, 90% and 100% acetone. The results also revealed that all isolates have a pungent odor and greasy texture. The results showed that the isolate from 100% DCM was found insoluble in both distilled water and petroleum ether but soluble in both methanol and ethanol. Meanwhile, the 30%, 60%, 90% and 100% acetone were found insoluble in distilled water but soluble in petroleum ether, methanol, and ethanol. The results revealed that the isolates from DCM, 30%, 60% and 100% acetone have glycosides. On the other hand, the presence of saponins was found only from 60%, 90% and 100% acetone. The presence of flavonoid was found in 30%, 60% and 100% acetone. In addition, terpenoids

was identified in DCM, 30%, 60% and 100% acetone. The mean zone of glucose reduction of the glucose reduction of the DCM was 22.60, the 30% acetone was 20.40, the 60% acetone was 17.40, the 90% acetone was 8.80, and the 100% acetone was 10.60.

Based on the results, the isolates showed glucose reduction but exhibited low antidiabetic activity.

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ISOLATION AND ANTIDIABETIC ACTIVITY OF THE CHEMICAL COMPONENTS FROM BIGNAI LEAVES

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INTRODUCTION

Diabetes mellitus is a pancreatic disease affecting carbohydrate, protein and lipid metabolism. In severe diabetes mellitus, the concentration in the blood of a sugar, glucose, is markedly elevated and large amounts of glucose are excreted in urine (Grolier encyclopedia of knowledge, p. 121).

About 360 million people all over the world are diagnosed with the diabetes (Delos Reyes, 2013). It affects more than 10 million people in the United States and causes about 300,000 fatalities each year. Philippines, on the other hand, is also severely affected by this disease. In the Philippines, it has been found out that there are 4.1% or 2.5 million Filipinos have diabetes, with perhaps many people still remain undiagnosed. Diabetes is also one of the top ten causes of Filipino death. (Philippines Center for Diabetes, 2013).

Varieties of methods are being implemented to diagnose diabetes mellitus.