

**SCREENING OF BIO LETHAL PROPERTY OF ETHANOLIC AND
METHANOLIC IPIL-IPIL (*Leucaena leucocephala*) LEAVES
EXTRACT USING THE NAUPLII OF BRINE SHRIMP
(*Artemia salina*)**

THESIS

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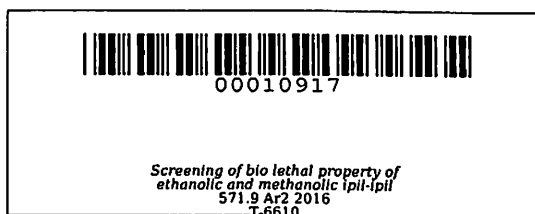
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IPIL-IPIL (*Leucaena leucocephala*) LEAVES EXTRACT USING
THE NAUPLII OF BRINE SHRIMP (*Artemia salina*)**

Undergraduate Thesis
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In partial fulfillment
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ABSTRACT

ARCILLA, AIRA ELAINE L., AND ROTAIRO, LORRAINE B. Screening of Bio Lethal Property of Ethanolic and Methanolic Ipil-ipil (*Leucaena leucocephala*) Leaves Extract Using the Nauplii of Brine Shrimp (*Artemia salina*). Undergraduate Thesis. Bachelor of Science in Medical Technology, Cavite State University, Indang, Cavite, November 2016. Adviser: Ms. Isolde M. Quitan, RMT.

The study, entitled “**Screening of Bio Lethal Property of Ethanolic and Methanolic Ipil-ipil (*Leucaena leucocephala*) Leaves Extract Using the Nauplii of Brine Shrimp (*Artemia salina*),**” was conducted at Department of Medical Technology Laboratory, College of Nursing, Cavite State University-Indang Campus from March 2016 to August 2016. The study generally aimed to screen the bio lethal property of ethanolic and methanolic Ipil-ipil (*Leucaena leucocephala*) leaves extract using the nauplii of brine shrimp (*Artemia salina*). Specifically, this study aimed to determine the constituents of Ipil- ipil leaves through phytochemical analysis; determine the significant difference among treatments of ethanolic and methanolic extracts on the mortality rate of the nauplii of brine shrimp (*Artemia salina*) and ascertain the LC₅₀ (lethal concentration) of the Ipil-ipil leaves extract using the nauplii of brine shrimp.

Ipil-ipil leaves were collected from Barangay Santol, Tanza, Cavite were air dried and powderized. Pounded plant material was soaked in ethanol and methanol for 72 hours, was extracted using rotary evaporator and different concentrations of extracts were prepared.

Cytotoxicity was evaluated in terms of lethality concentration (LC₅₀). Ethanolic and methanolic extract of Ipil-ipil leaves showed both with LC₅₀ value of 3.476 µg/mL and 2.598 µg/mL respectively. The percent mortality was also calculated to ensure that

the death of the nauplii of brine shrimps was attributed to the bioactive compounds present in the plant extracts.

The study showed that the extracts of Ipil-ipil leaves exhibited cytotoxic activity against the nauplii of brine shrimps. However both 60 percent concentration of ethanolic and methanolic extract was the most effective against the nauplii of brine shrimps. methanolic Ipil-ipil leaves extract showed the highest percent mortality of 99.44 percent.

Based on the results of the study, the researchers would like to recommend the following: (1) cytotoxic study should be conducted using a larger population of brine shrimps to further assess the cytotoxic potential of plant extract; (2) the extracted compound should be subjected to Nuclear Magnetic Resonance (NMR), Column Chromatography, or Thin- Layer Chromatography to isolate the specific compound responsible for cytotoxic activity; and (3) anti-cancer potential of the extracted compound maybe evaluated using cancer cell line.

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INTRODUCTION

Mitosis is a process of cell division. It is remarkably similar in all animals and plants. It occurs in the somatic cells and it is meant for the multiplication of cell number during embryogenesis and blastogenesis of plants and animals. Antimitotic agents interrupt or stop the process of cell division so that it will be beneficial in life threatening diseases like cancer (Gaikwad, 2011).

Toxicity is the degree to which a substance can damage an organism, as well as the substructure of the organism, such as a cell (cytotoxicity). The ability of destroying living cells by certain chemicals or mediators cells is cell cytotoxicity. Healthy living cells can either be induced to undergo necrosis or apoptosis (Man, 2012).