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FRACTIONATION, ISOLATION AND IDENTIFICATION OF COMPOUNDS FROM ETHYL ACETATE ROOT EXTRACT OF *Salacia macrophylla*

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ABSTRACT

This study was carried out to study the phytochemical constituents of the ethyl acetate extracts from the roots of *Salacia macrophylla*. Several stages were taken in order to accomplish this study. The first stage is the fractionation of the crude extract to remove impurity that comes together with the pure compounds. Second stage was the isolation of the pure compound by thin layer chromatography. Last but not least, the pure compound that has been obtained undergoes several test methods to identify the structure of the compound by spectroscopic technique. The pure compound was identified as netzahualcoyene after comparing it to a compound that was previously isolated.

CHAPTER 1

INTRODUCTION

Asia Pacific regions have been known to have a lot of rainforest which provide countless of plant species. Many of these plants species had been develop as medicine to be use for particular ailments. Numerous researches have been conducted to search for a new drug by studying the efficiency and pharmacological effects of the constituents of the plants species. Examples of drugs derived from plants are digoxin, a cardiotonic which was isolated from *foxglove* and vincristine isolated from *Madagascar periwinkle* which was effective in treating acute lymphoblastic leukemia (ALL) and non-hodgkin lymphoma. Other drugs of plants origin include paclitaxel, Reserpine, tubocurarine, etc.

The root of *Salacia* species has been used for thousand of years for the treatment or prevention of diabetes. The *Salacia* species of family Celastraceae include *S. reticulata, S. oblonga, S. chinensis, S. beddomei, S. macrophylla, S. exclpta, S. prinoides,* etc. The decoction of *S. reticulata* roots is used in the treatment of rheumatism, gonorrhea, itching and swelling, asthma, thirst, amenorrhea and dysmenorrheal. Phytochemically, the presence of a variety of chemical constituents such as 1,3-diketones, dulcitol and leucopelargonidin (a linear isomer of natural rubber), iguesterin (quinonemethides), mangiferin and epicatechin (phenols), phlobatannin and glycosidal tannins, triterpenes, 30-hydroxy-20(30) dihydroisoiguesterin, salacinol and kotalanol (thiosugar) has been detected in the root of *S. reticulata.* Salacinol, kotalanol, and