CHEMICAL CONSTITUENTS OF *Litsea cyclindrocarpa* AND THEIR CYTOTOXIC ACTIVITIES

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Dear Professor,

FINAL RESEARCH REPORT "CHEMICAL CONSTITUENTS OF *LITSEA CYCLINDROCARPA* AND THEIR CYTOTOXIC ACTIVITIES"

With reference to the above, I am pleased to submit four copies of the Final Research Report entitled "Chemical Constituents of *Litsea cyclindrocarpa* and Their Cytotoxic Activities".

Thank you.

Yours faithfully,

NYOTIA NYOKAT
Leader
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ABSTRACT

Separation of chemical components was carried out on the stem bark and leaves extracts of *Litsea cyclindrocarpa* collected from the Semenggok mixed dipterocarp forest in Sarawak. The extraction was carried out at room temperature using methanol followed by fractionation by using non polar solvent (hexane), semi polar solvent (ethyl acetate) and polar solvent which is methanol. The isolation and purification of the components were carried out on the fraction of extracts. One compound was isolated from the fraction of leaves extract and identified as β-sitosterol. A compound was isolated from the fraction of the bark extract and it was identified as chalcone. The structures of the two components were elucidated using spectroscopic methods which included nuclear magnetic resonance (NMR) spectroscopy (^{1}H), infrared (IR) spectroscopy and gas chromatography-mass spectroscopy (GCMS). This was later compared with data obtained from the literature review.

CHAPTER 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

Interest in the exploitation of medicinal and aromatic plants as pharmaceuticals, herbal remedies, flavourings, perfumes and cosmetics, and other natural products has greatly increased in recent years. These medicinal plants have been used by humans since pre-historical times, and studies have pointed out that many drugs that are used in commerce have originated from folk-use and use by indigenous cultures (Anonymous, 1994). Most of the plants that have been used by humans are flowering plants. Malaysia is rich in various types of flora and fauna and it is listed as the 12th most bio-diverse nation in the world with over 15,000 flowering plants and over 3,000 species of medicinal plants (Adenan, 2003).

Nevertheless, about 1,300 from these 15,000 species of flowering plants are reported to be useful in pharmaceuticals, herbal remedies, flavourings, perfumes and cosmetics (Latiff, Ismail, Omar, Said, & Kadri, 1984) while about 50 drugs have been discovered from ethnobotanical leads by translating folk knowledge into new pharmaceuticals (Cox, 1994).