

GC-MS ANALYSIS OF TERPENOIDS FROM LEAVES OF *Canarium odontophyllum* Miq. (DABAI)

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ABSTRACT

Terpenoids are defined as secondary metabolites with carbon backbone molecular structures consisting of isoprene (2-methylbuta-1, 3-diene) units. They demonstrate important biological activities, such as antibacterial, antiviral, antimalarial, antiinflammatory, anticancer and cholesterol synthesis inhibition activities. *Canarium odontophyllum* Miq. or locally known as “dabai” is an endemic plant in Sarawak, Malaysia. Its leaf compositions were examined by using the GC-MS analysis in order to compare and contrast their volatile terpenoids constituents. The terpenoids content were 36.67% and 14% for hexane and ethanol extracts, respectively. n-Hexadecanoic acid, phytol and octadecanoic acid were the major terpenoids constituents from the leaves of *C. odontophyllum* Miq. n-Hexadecanoic acid (20.22%), phytol (8.74%) and octadecanoic acid (7.54%) were found to be predominant in the hexane extract, while phytol (21.02%) and n-hexadecanoic acid (14.52%) were major constituents in the ethanol extract. The *C. odontophyllum* Miq. leaf constituents are also related to their biological activities and would offer promising therapeutic effects. Further investigation should be conducted to develop it as a potential therapeutic drug.

Keywords: *Canarium odontophyllum*, dabai, GC-MS, biological activities, terpenoids

INTRODUCTION

Terpenoids are classified as secondary metabolites with carbon backbone-containing molecular structures made up of isoprene (2-methylbuta-1,3-diene) units. In growth and development, thousands of terpenoids produced by plants have no discernible role and thus are classified as “secondary” metabolites. Important medicinal activities are shown by the terpenoids group such as antiviral, antibacterial, antimalarial, antiinflammatory, cholesterol synthesis inhibition and anticancer (Mahato & Sen 1997).

It has been shown that plants of the genus *Canarium* contain different biological activities, such as antioxidant, antibacterial, antifungal, antitumour, antiinflammatory, hepatoprotective, analgesic and antidiabetic (Mogana & Wiart 2011; Basri & Nor 2014). To date, only several biological studies had been conducted to investigate the properties of *C. odontophyllum* Miq. *Canarium odontophyllum* Miq. or locally known as “dabai” is an indigenous fruit to Sarawak, Malaysia and devoured as snack food by the natives (Latiff *et al.* 2000). Dabai fruit comprises of edible skin (5–6%) and flesh (54–60 %), and kernel (35–40 %). However, *C. odontophyllum* Miq. is classified as an underutilised fruit and has not been fully explored due to lack of promotion. Our study investigated and determined the terpenoids from *C. odontophyllum* leaf hexane and ethanol crude extracts.