

UNIVERSITI TEKNOLOGI MARA

**COLLECTION, EXTRACTION, FRACTIONATION AND
ISOLATION OF PHYTOCHEMICALS OF PANDANACEAE
SPECIES**

MD FAIZUL KAMARUDDIN

**Dissertation submitted in partial fulfillment of the requirements
for the degree of Bachelor of Pharmacy (Hons)**

Faculty of Pharmacy

OCTOBER 2006

ACKNOWLEDGEMENTS

Any large endeavor of this type cannot be completed without the help of many individuals. I am deeply indebted to many who rose the occasion and provided extra time, at short notice, to help in the completion of this project. In this regard I am particularly thankful to Prof. Dr. Jean-Frédéric Faizal Weber for his kindness, supervision, guidance and especially for his comments and suggestions throughout this project.

Special thanks to Dr. Humera Naz, who has assisted my friends and me, who made sure that everyone did his or her job and remained on track. Her supervisory and editorial task drove us to be more dedicated throughout the completion of this project.

I am also extremely grateful to many of the staffs of Institute of Chemistry and Herbal Remedies (iKUS) laboratory for providing me with the beneficial knowledge about the equipments in the laboratory and the exact way to use the equipments.

And finally, ventures such as this exact a heavy toll from the families of mine. I thank them for their tolerance of my absences, physically and emotionally. I am blessed and strengthened by their unconditional support and love, and for their sharing with us the belief that my efforts are worthwhile and useful.

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ABSTRACT

The main objective of this study is to isolate as many as possible the phytochemical constituents of the *Pandanus*. There are several techniques involved in order to achieve the objective of this project. The first process involved the extraction of the sample by using petroleum ether and methanol. Further fractionation had been done to separate the number of compounds presented in the extract. The isolation process began when the promising compound(s) detected on the TLC plate. The preparative TLC method had been used to isolate the compound(s). The focus was on fraction 93 to 97 and fraction 120 to 122. 2 compounds were detected namely, compound 1 and 2. The compound(s) had been sent for identification by using Nuclear Magnetic Resonance (¹H NMR) spectrometer. Concisely, even though the compound(s) of desired has failed to be elucidated, we managed to identify the present of several potential compound(s) by using the TLC technique.

CHAPTER 1

INTRODUCTION

Plants have provided man with all his needs in terms of shelter, clothing, food, flavours and fragrances as not the least, medicines (Gurib-Fakim *et al.*, 2006).

The specific plants used and the methods of applications were passed down from generations through oral history. In more recent history and until today, numerous researches have been actively investigating for new drug discovery from medicinal plants in view of their potential health benefits. One of the rarely plant described in the literature is the *Pandanus* species.

Plants of the genus *Pandanus* are prevalent in tropical areas, especially on the Pacific islands, Malaysian islands and Australia. It is a complex paleotropical genus comprising probably 600-700 species (Vahirua-Lechat *et al.*, 1996; Takayama *et al.*, 2001; Inada *et al.*, 2005). It is believed to contain various medicinal properties which have been used as traditional folk medicines (Takayama *et al.*, 2001). The genus is not well studied chemically with only four species reported in the literature (Nonato *et al.*, 1993).

Thus, the specific goals of this study are to extract, fractionate and isolate as many as possible the chemical constituents from the leaves of the *Pandanus* species.