

**ISOLATION OF MAJOR ALKALOIDS FROM THE LEAVES OF
MALAYSIAN *Uncaria cordata*, Merr.**

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TABLE OF CONTENTS

| | Page |
|--|-------------|
| ACKNOWLEDGEMENTS | iii |
| TABLE OF CONTENTS | iv |
| LIST OF TABLES | vi |
| LIST OF FIGURES | vii |
| LIST OF ABBREVIATIONS | ix |
| ABSTRACT | x |
| ABSTRAK | xi |
| | |
| CHAPTER 1 INTRODUCTION | |
| 1.1 Background | 1 |
| 1.2 Problem statement | 3 |
| 1.3 Objectives of study | 4 |
| 1.4 Significance of study | 4 |
| 1.5 Scope and limitation | 4 |
| | |
| CHAPTER 2 LITERATURE REVIEW | |
| 2.1 Phytochemistry of <i>Uncaria</i> genus | 9 |
| 2.2 <i>Uncaria cordata</i> | 11 |
| | |
| CHAPTER 3 METHODOLOGY | |
| 3.1 Materials | 19 |
| 3.1.1 Raw material | 19 |
| 3.1.2 Chemicals | 19 |
| 3.1.3 Apparatus | 20 |
| 3.1.4 Instruments | 20 |
| 3.2 Methods | 20 |
| 3.2.1 Sample preparation | 20 |
| 3.2.2 Extraction of sample | 21 |
| 3.2.3 Fractionation of crude extract using solid phase extraction (SPE) | 21 |
| 3.2.4 Isolation of alkaloids | 22 |
| 3.2.5 Purification of alkaloids | 23 |
| 3.2.6 Elucidation of alkaloids | 23 |
| 3.2.6.1 GC-MS spectrometer | 23 |
| 3.2.6.2 ¹ H NMR spectrometer | 24 |

ABSTRACT

ISOLATION OF MAJOR ALKALOIDS FROM THE LEAVES OF MALAYSIAN *Uncaria cordata*, Merr.

The alkaloids of Malaysian *Uncaria cordata* (Rubiaceae) leaves were isolated and their structures were elucidated. The methanolic extract of the *Uncaria cordata* leaves was fractionated using the solid phase extraction technique (SPE) before being introduced to various chromatographic techniques namely column chromatography, thin layer chromatography and centrifugal chromatography to isolate the alkaloids. ¹H NMR spectroscopy and hyphenated GC-MS technique were used in determining the structures of the alkaloids isolated. Two heteroyohimbine-type alkaloids from *Uncaria cordata* were successfully isolated and they are specifically from the *allo*-type. These alkaloids have never been reported to be isolated from the *Uncaria cordata* leaves in any literature review. Compound **X** was found to be Uncarine E whereas the structure of compound **Y** could not be identified due to a poorly resolved ¹H NMR spectrum obtained. However, its structure was narrowed down to two *allo*-type oxindole alkaloids namely Uncarine E and rauniticine-*allo*-oxindole A.

CHAPTER 1

INTRODUCTION

1.1 Background

The objective of studying medicinal plants is the discovery of new bioactive components, in the search of promising drugs (Heitzman et al., 2005). The *Uncaria* genus has been an important source of medicinal natural products in which for the past 20 years, many alkaloids, terpenes, quinovic acid glycosides, flavanoids and coumarins have been isolated (Heitzman et al., 2005). It has been used as traditional medicines to treat wounds, ulcers, fevers, headaches, gastrointestinal illnesses and bacterial/fungal infections (Chang et al., 1989).

Uncaria genus is a woody climber which belongs to the family of Rubiaceae. It is a vine or shrub with penduncles that appear as curved hooks on the side shoots. It can be found in most of the tropics mainly in Southeast Asia, Africa and South America. *Uncaria* genus contains 34 species where most of them are in Malaysia (Risdale, 1978).