

UNIVERSITI TEKNOLOGI MARA

**EFFECT OF VARIOUS RECEPTOR
ANTAGONISTS ON THE AQUEOUS EXTRACT OF
DICRANOPTERIS LINEARIS ANTINOCICEPTIVE
ACTIVITY IN MICE.**

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TABLE OF CONTENTS

| | Page |
|--|-------------|
| TITTLE PAGE | |
| APPROVAL | |
| ACKNOWLEDGEMENTS | i |
| TABLE OF CONTENTS | iii |
| LIST OF FIGURES | v |
| LIST OF TABLES | vi |
| LIST OF ABBREVIATIONS | vii |
| ABSTRACT | viii |
| | |
| CHAPTER | |
| | |
| 1 INTRODUCTION | |
| 1.1 Background of the studies | 1 |
| 1.2 Problem statement | 2 |
| 1.3 Objective of the studies | 2 |
| | |
| 2 LITERATURE REVIEWS | |
| 2.1 Natural products | 3 |
| 2.2 Medicinal plants | 4 |
| 2.3 <i>Dicranopteris linearis</i> | 5 |
| 2.4 Pain | 6 |
| 2.5 Analgesia | 8 |
| 2.6 Analgesic compounds | 9 |
| 2.7 Non steroidal anti-inflammatory drugs (NSAIDs) | 9 |
| 2.8 Receptors' antagonists | 10 |

ABSTRACT

Dicranopteris linearis L, locally known as 'Resam' is traditionally used to control fever, to treat external wound, ulcers and broils. Scientifically, this plant has been proven to possess antinociceptive, anti-inflammatory and anti-pyretic activities. The present study was carried out to determine the involvement of various receptors in the antinociceptive activity of aqueous extract of *Dicranopteris linearis* (AEDL) using the mice abdominal constriction test. Mice were pre-treated subcutaneously with distilled water, followed 10 minute later by the subcutaneous (s.c) administration of 300, 500, and 1000 mg/kg concentration AEDL. All concentrations AEDL produced a significant ($p < 0.05$) antinociceptive activity. Based on the antinociceptive profile, the 500mg/kg AEDL was chosen for further investigation. After 10 minutes s.c pretreatment with naloxone, methysergide, haloperidol, reserpine, theophylline, propranolol, pindolol, α -methyl-L-tyrosine, p-phenylalanine, atropine, yohimbine or thioperamide, the mice were pretreated (s.c) with 500 mg/kg AEDL. The results obtained indicate that only 3 and 10 mg/kg naloxone, 5mg/kg atropine and yohimbine, and 10 mg/kg thioperamide significantly ($p < 0.05$) reversed the extract antinociceptive activity, at the peripheral level, is mediated via modulation of the opioids, muscarinic, α_2 -adrenoceptor and non-selective adencine receptors systems. The statistical analysis was calculated by using one-way ANOVA.

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Nowadays, many researches are focusing on the use of natural-based products to treat various ailments as it is belief to exert fewer side effects compared to the available drugs in the market. One of the research fields that have attracted scientists nowadays involved the discovery of the natural pain relieving agents.

Dicranopteris linearis (L.), locally known to the Malays as “*Resam*”, is a plant that belongs to the family Gleicheniaceae (Pollunin, 1987; Derus, 1998). It belongs to a family of ferns that is considered somewhat primitive and is among the few branching ferns that can quickly develop into thickets up to 2 m tall, shading out all other plants (Chin, 1993; 1998)

In Malaysia, particularly, the leaves of *D. linearis* were used in the folklore medicine to reduce body temperature and to control fever. The leaves were squeezed in water, and then be drank or applied on the body as poultice. However, based on the literature search, there is lack of report on its traditional uses in other part of the world with only two reports described on its use to treat external wound, ulcers and broils by the people of Papua New Guinea , to get rid of intestinal worms by the people of Indochina (Chin,