

UNIVERSITI TEKNOLOGI MARA

**EFFECT OF VARIOUS ANTAGONISTS ON THE
PERIPHERAL ANTINOCICEPTIVE ACTIVITY OF
AQUEOUS EXTRACT OF *MELASTOMA
MALABATHRICUM* IN MICE**

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

Faculty of Pharmacy

October 2007

ACKNOWLEDGEMENT

I would like to take this opportunity to express my deepest gratitude and appreciation to my supervisor, Dr Zainul Bin Zakaria, of the Faculty of Pharmacy, MARA University of Technology (UiTM) for his guidance, advice and instructions right from the first stage of preparation and throughout this research project. If not for his support, encouragement and good advice wherever required it would not have been possible for me to accomplish this study as good as possible. I also would like to wish my appreciation to my labmates, Nurul Husna and Khairryah; laboratory assistant, Mr. Syed Ridhuan and Ms Shermilah; research assistance, Mr. Hanan for their kind assistance and cooperation.

Special thanks to Dr. Kalavathy, the coordinator for the Research Instrumentation (PHM 555) course for her continuous support in making this research study as a complete success. Special thanks also to Faculty of Pharmacy UiTM for their financial support as well as providing the well equipped facilities.

Last but not least, my gratitude toward all the lecturers, course mates, family members and friends for their encouragement and supports I making this final year research project possible.

Thank you very much.

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ABSTRACT

The antinociceptive effect of the aqueous extract of *Melastoma malabathricum* was investigated using acetic acid-induced abdominal constriction test in mice. It was demonstrated that the extract (300–1000 mg/kg, subcutaneously) significantly ($P<0.05$) and dose-dependently inhibited the acetic acid-induced writhing with an ED_{50} of 650 mg/kg. Pre-treatment with various receptors antagonists, namely Yohimbine, Theophylline, Thioperamide, Reserpine, Pindolol or 4-Chloro-DL-Phenylalanine, but not Naloxone, Haloperidol, Methylsergide, Atropine, Propranolol or Alpha-methyl-tyrosine, significantly ($P<0.05$) reversed the extract's antinociceptive activity. In conclusion, the present study confirms the traditional uses of *M. malabathricum* aqueous extract to treat pain-associated ailments and that the activity involves modulation of non-opioid receptors.

Keywords: *Melastoma malabathricum*; aqueous extract, antinociceptive, abdominal constriction test.

CHAPTER 1

INTRODUCTION

1.1 Background

Natural product has been used since a long time ago to treat various diseases or ailments such as fever, inflammation and pain. Pain is one the commonest symptoms in medicine and said to be the prime cause of one third of all consultation. Although there are many analgesic drugs that are available in the market, most of them are known to produce undesirable side-effects such as gastric ulceration, drowsy and addiction. Nowadays natural products have gain popularity among the consumers. According to a survey released in May 2004 by the National Center for Complementary and Alternative Medicine of the United States, herbal therapy, or use of natural products other than vitamins and minerals, was the most commonly used complementary and alternative medicine (CAM) therapy (18.9%) (Barnes 2004). Hence many drug companies have focused on traditional medicine which is believed to have fewer side effects (Hanson 2002).

Melastoma malabathricum (L.), also known as “Senduduk” among the Malays, belongs to the family Melastomataceae. Various parts of the plant are used to treat many types of ailments. Its leaves, other than being used as tonic (Institute Of Medical Research 2002), may be chewed or pounded to produce paste and applied to the inflamed wound or finely chopped and squeeze the juice onto the wound to stop bleeding (Ahmad et al. 1993). The powdered of *M. malabathricum* leaves can be used as