## ANTI-INFLAMMATORY, ANALGESIC, AND ANTIPYRETIC ACTIVITIES FROM Stahlianthus involucratus RHIZOMES ETHANOL EXTRACT IN

ANIMAL MODELS

2/02/03/03

### PHORNCHAI PINGSUSAEN

MASTER OF SCIENCE IN PHARMACOLOGY

HAR MA

# **ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่** Copyright<sup>©</sup> by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY SEPTEMBER 2011

## ANTI-INFLAMMATORY, ANALGESIC, AND ANTIPYRETIC ACTIVITIES FROM Stahlianthus involucratus RHIZOMES ETHANOL EXTRACT IN

ANIMAL MODELS

### PHORNCHAI PINGSUSAEN

2/570

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PHARMACOLOGY

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright<sup>©</sup> by Chiang Mai University All rights reserved

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY SEPTEMBER 2011

## ANTI-INFLAMMATORY, ANALGESIC, AND ANTIPYRETIC ACTIVITIES FROM Stahlianthus involucratus RHIZOMES ETHANOL EXTRACT IN

#### ANIMAL MODELS

PHORNCHAI PINGSUSAEN

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PHARMACOLOGY

EXAMINING COMMITTEE

THESIS ADVISORY COMMITTEE

ADVISOR

**CO-ADVISOR** 

Leundoon Streerationy CHAIRPERSON

Assoc. Prof. Dr. Seewaboon Sireeratawong Dr. Puongtip Kunanusorn

Assoc. Prof. Dr. Ampai Panthong

Assoc. Prof. Dr. Ampai Panthong

with a kam Chinamithanut CO-ADVISOR

P.termember

Dr. Puongtip Kunanusorn

Dr. Natthakarn Chiranthanut

Notthakam Chinandhand MEMBER Dr. Natthakarn Chiranthanut

Dr. Parirat Khonsung

Klanny MEMBER

Dr. Parirat Khonsung

13 September 2011 © Copyright by Chiang Mai University

#### ACKNOWLEDGEMENT

I would like to express my sincere respect and gratitude to my chief advisor, Dr. Puongtip Kunanusorn, for her excellent guidance, encouragement, valuable advice, and generous help in writing this thesis as well as for her strong support of my studies.

I am most grateful to my thesis co-advisors, Assoc. Prof. Dr. Ampai Panthong, Dr. Natthakarn Chiranthanut, and Dr. Parirat Khonsung, including the staff of the Department of Pharmacology, Faculty of Medicine, Chiang Mai University for their advice during doing my research work.

I would like to express my gratitude to Asst. Prof. Dr. Chaiyong Rujjanawate (School of Health Science, Mae Fah Luang University) for providing the plant extract.

The Faculty of Medicine, Chiang Mai University is greatly appreciated for the Endowment Fund for the research work.

Finally, I am especially grateful to my family for their support, helpfulness, understanding, and encouragement.

Phornchai Pingsusaen

## ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright<sup>©</sup> by Chiang Mai University All rights reserved

TAMAI