ANTICANCER AND MULTIDRUG REVERSING ACTION OF QINGHAOSU DRUGS: A STUDY OF ITS IMPACT ON MITOCHONDRIAL AND CELLULAR ENERGETIC STATE OF DRUG-SENSITIVE AND DRUG-RESISTANT CELLS

PAIBOON REUNGPATTHANAPHONG

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

THE GRADUATE SCHOOL CHIANG MAI UNIVERSITY APRIL 2006 ISBN 974-9891-67-8

ANTICANCER AND MULTIDRUG REVERSING ACTION OF QINGHAOSU DRUGS: A STUDY OF ITS IMPACT ON MITOCHONDRIAL AND CELLULAR ENERGETIC STATE OF DRUG-SENSITIVE AND DRUG-RESISTANT CELLS

PAIBOON REUNGPATTHANAPHONG

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

EXAMINING COMMITTEE

Dr. Samlee Mankhetkorn	CHAIRPERSON
W. Terpanyolal	. MEMBER
Assoc. Prof. Dr. Wongwiwat Tassaneeyakul	
Wiratu Ol	. MEMBER
Asst. Prof Dr. Wisatre Kongcharoensuntorn	
	MEMBER
Dr. Chatchanok Loetchutinat	
Suchaet Kethan	MEMBER V V
Dr. Suchart Kothan	3 C I V C U

10 April 2006

© Copyright by Chiang Mai University

ACKNOWLEDGMENT

My sincere gratitude is due to my advisor, Dr. Samlee Mankhetkorn for the encouragement, exceptional ideas and support during the course of this study and for providing the excellent facilities for my work. I would like to thank Professor Garnier-Arlette Suillelot for her warm support and resource.

I am especially grateful to Dr. Carole Marbeuf-Gueye for her fruitful co-operation and Professor Laurence Le Moyec for guiding me in the intricacies of NMR spectrometry.

My special thanks to PCMCB research group, M. Tungjai, S. Dechsupa, J. Meesungneon, W. Sutthana, W. Prarom. I have enjoyed our productive teamwork.

I want to thank my parents, most sincerely, my whole family and close relatives for their loving support in the course of my almost endless years of study.

This work, was carried out at the Faculty of Sciences, Burapha University. during the years 2001–2003 and the Department of Radiologic Technology, Faculty of Associate Medical Sciences, during the years 2004–2005. Part of the work was performed at Laboratoire de Physicochimie Biomoléculaire et Cellulaire (LPBC/CSSB UMR 7033) Université Paris Nord, 74 rue Marcel Cachin, 93017 Bobigny, FRANCE.

I would like to thank the Royal Golden Jubilee Ph.D. Program; Thai Research Fund (TFR), Thailand and the ambassador of France for their financial support: (contract number PHD/0199/2543, that began from 1 June 2001).

Copyright by Chiang Mail Univers

Paiboon Reungpatthanaphong