Goodness portion of present dissertation is dedicated to my family, my teachers, and all teaching staffs

ACKNOWLEDGEMENTS

I wish to acknowledge my advisor, Prof. Dr. Bungorn Sripanidkulchai for her useful guidance, kindness and support me throughout this project.

I deeply appreciate my parents and family for their love, endless supports and encouragement. In addition, I would like to thank the staffs of Center for Research and Development of Herbal health Products for their help, encouragement and friendship.

I also acknowledge Center for Research and Development of Herbal Health Products, Khon Kaen University for facilities. Finally, I would like to thank for Graduate School, Khon Kaen University and National Research Council of Thailand for the scholarships.

Jintana Junlatat