

**PROTEOMIC ANALYSES OF *Streptococcus suis*
SEROTYPE 2 AND SEROTYPE 14 DURING
EXPOSURE TO MACROPHAGES**

PEERARIN PRANGSUWAN

**MASTER OF SCIENCE
IN MICROBIOLOGY**

**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY**

MARCH 2014

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright© by Chiang Mai University
All rights reserved

**PROTEOMIC ANALYSES OF *Streptococcus suis* SEROTYPE 2 AND
SEROTYPE 14 DURING EXPOSURE TO MACROPHAGES**

PEERARIN PRANGSUWAN

**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
IN MICROBIOLOGY**

GRADUATE SCHOOL, CHIANG MAI UNIVERSITY

MARCH 2014

**PROTEOMIC ANALYSES OF *Streptococcus suis* SEROTYPE 2 AND
SEROTYPE 14 DURING EXPOSURE TO MACROPHAGES**

PEERARIN PRANGSUWAN

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

Examination Committee:

Advisory Committee:

Sittiruk Roytrakul.....Chairman
(Dr. Sittiruk Roytrakul)

Kwanjit Duangsonk.....Advisor
(Dr. Kwanjit Duangsonk)

Kwanjit Duangsonk.....Member
(Dr. Kwanjit Duangsonk)

Hathairat Thananchai.....Co-advisor
(Dr. Hathairat Thananchai)

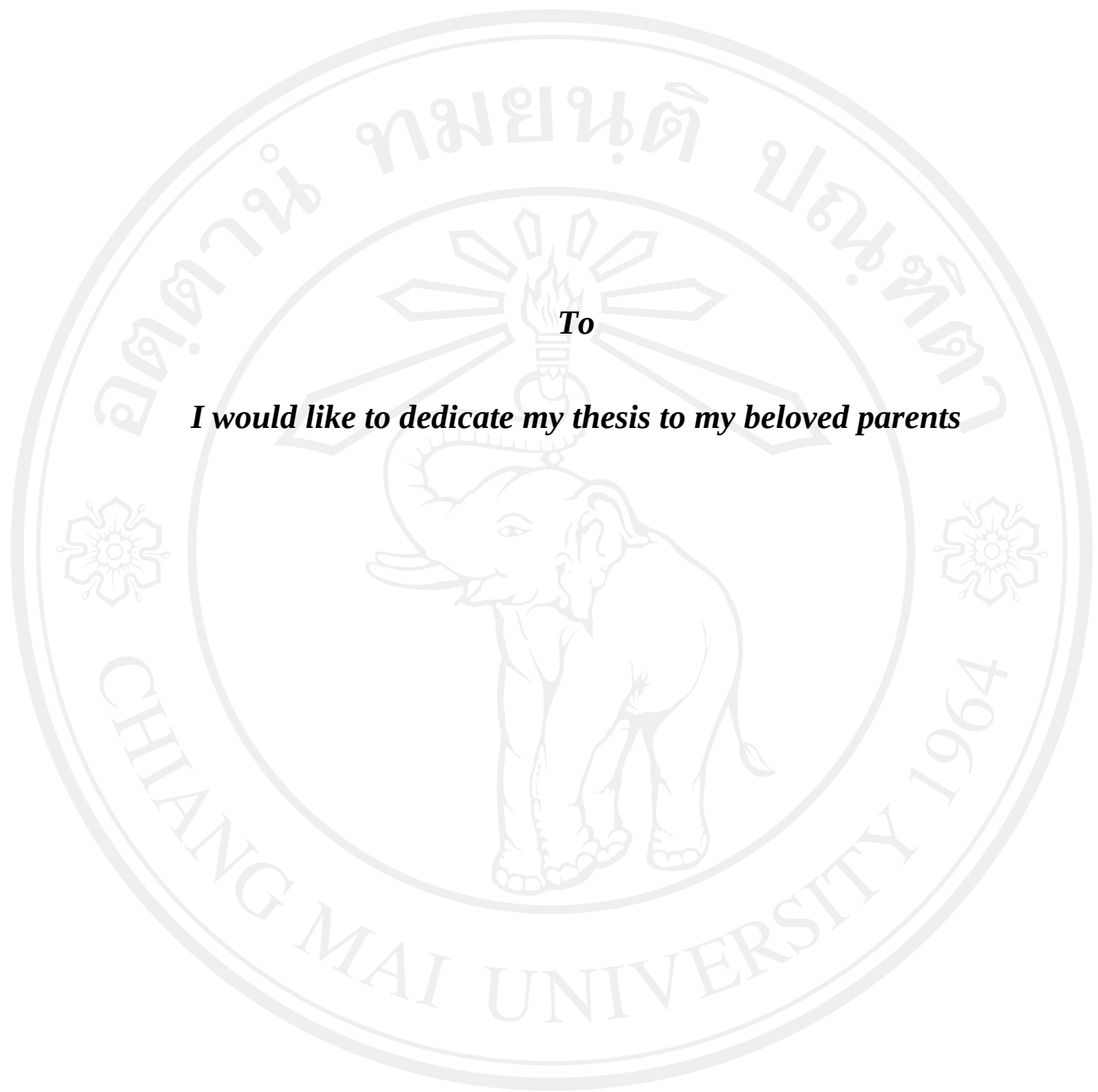
Hathairat Thananchai.....Member
(Dr. Hathairat Thananchai)

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright © by Chiang Mai University
All rights reserved

27 March 2014

Copyright © by Chiang Mai University



To

I would like to dedicate my thesis to my beloved parents

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

Copyright© by Chiang Mai University
All rights reserved

ACKNOWLEDGEMENT

First of all, I would like to thank Dr. Kwanjit Duangsonk my thesis advisor, for her constant support, kindness, advice on my draft thesis, and also to Dr. Hathairat Thananchai my co-advisor for her help, advice and technical support.

I would like to give special thanks to Assoc. Prof. Prasit Tharavichitkul for providing *S. suis* strains isolated from diseased pig, healthy pigs, human patients, and also to Asst. Prof. Dr. Khajornsak Tragoolpua for providing the human leukemic monocyte lymphoma cell line (U937).

This thesis would not have been possible without the help in proteome analysis of Dr. Sittiruk Roytrakul, for his suggestions throughout this study. I would also like to thank Miss Narumon Phaonakrop, Miss Jantima Jaresitthikunchai, Mr. Chartchai Chaichana for the high performance liquid chromatography mass spectrometry (LC-MS) and for invaluable technical assistance, respectively and all members of the Proteomics Research Laboratory, BIOTEC for their friendship and help me in the proteomics part of this study.

The research described in this thesis was performed at the Department of Microbiology, Faculty of Medicine, Chiang Mai University and Genome Institute, National Center for Genetic Engineering and Biotechnology, National Science and Technology Development Agency, Thailand and was financially supported by the National Research Council of Thailand (NRCT).

For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

Peerarin Prangsuwan