

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude and appreciation to my advisor, Assistant Professor Porn Tippa Lekcharoensuk, for valuable suggestion and advice throughout the study and research. I also would like to express appreciation to my thesis committee: Assistant Professor Theerapol Sirinarumitr, major committee and Associate Professor Chaivat Kitigul, minor committee for suggestion and comment to my research.

Big thanks go to Drs. Panchit Nikamhang, Tassanee Charoensong and Chatuporn Noosud for the positive and negative control sera used for test standardization and the assistance with sample collection.

I also thank Department of Microbiology and Immunology and Department of Companion Animal Clinical Signs, Faculty of Veterinary Medicine, Kasetsart University for providing facilities and equipments to perform all research. I would like to express my great appreciation to all staff of Department of Microbiology and Immunology, Faculty of Veterinary Medicine, Kasetsart University for their warm welcome and help.

Finally, special appreciation is expressed to my parents: Mr. Vanchai and Mrs. Sudarat Manasatienkij and my sister for their love and encouragement toward me.

Wudtichai Manasatienkij

July, 2006