ACKNOWLEDGEMENTS

“GOD Thank you for giving me the strength and encouragement especially during all the challenging moments in completing this thesis. I am truly grateful for your exceptional love and grace during this entire journey”.

First and foremost, my heartiest gratitude to my supervisors, Prof. Dr. Suresh Kumar Govind and Dr. Chandrawathani Panchadcharam, for their patience, continuous supervision, guidance, advice, and support in completing this thesis. They are the backbone of this project by giving wonderful suggestions and constructive criticism which gave this study a life. I express my humble gratitude to my supervisors for their willingness to spare me their time and guide me to complete my study.

I extend my gratitude to Prof Dr Rohela Mahmud, the Head of the Department of Parasitology, Prof Dr Yvonne, Dr Tan Tian Chye, Dr Sivanandam, Dr Chandramathi and all lectures from Department of Parasitology for their continuous support and encouragement in completing this study. Cik Mazni, En Mohd Afiffudin, En Abd Kahar, En Mohd Redzuan, Pn Rohani, En Sazalie and all staffs from Department of Parasitology for creating a friendly and healthy working environment.

My sincere gratitude to Dr. Ramlan Mohamed, the Director of Veterinary Research Institute of Ipoh, and all the staffs of Parasitology and Haematology section, Biochemistry Section, Bacteriology Section and Animal unit of Veterinary Research Institute Ipoh, and also to Prof. Jayalakshmi Pailoor and En. Khairul from the Pathology Department, Faculty of Medicine for their assistance and providing a conducive
working environment to carry out experiments. I would also like to specially thank Pn Premaalatha, Pn Farah Haziqah, Pn Shalini, En Zaini, Pn Jamnah, Dr Sabapathy, En Erwanas, Pn Lily, En Yusof, En Remy, En Dass, En Puniamoorthi, En Raghu, En Saad, En Bohari and En Najamuddin for providing the facilities to carry out the experiments for this study and helping me in handling the animals throughout my study. If not for their support and assistance, completing this dissertation would not be successful.

I would like to dedicate this dissertation to my beloved parents, Mr. and Mrs. Chandrasekaran – Neermala Devi, They have always visionalised my success and sacrificed their life to raise me to be a better person. Appa and amma, I hope I have made you both proud. I also would like to convey my appreciation to my lovely siblings, Yogamalar Chandrasekaran, Yogendran Chandrasekaran and Thevapriya Chandrasekaran for their endless love, support and prayers.

I would like to also thank my husband Mr. Vikneswaran Muthusamy, my parents-in-law, Mr. and Mrs. Muthusamy – Suriamala and my sister-in-law, Niranjana Devi Muthusamy for supporting and motivating me to complete this thesis. Thank you my one and only princess, Yaallini Devi Vikneswaran, my nephew Tharun Maniyarasu and niece Mahaletchumi Maniyarasu for being my stress relieves pills.

To all members and staffs from the Department of SEM, Faculty of Science; Department of TEM and Biotechnology lab, Faculty of Medicine and Institute Medical Research, for providing the facilities to carry out the experiments for this study.
I would like to convey a special thanks to Nanthiney Devi Ragavan and Kalyani Raman, whom are god’s precious gift to me and I am grateful to have such wonderful sisters who are always there for me.

Last but not least, I would like thank Gaythri, Anitamalar Devi, Arutchelvan, Nithyamathi, Hemah, Illamangai and Sonal Girish for showing their true friendship, care and support when I needed them the most. They were more like a family to me apart from being my research buddies.

My gratitude to Mybrain15 scholarship scheme and Postgraduate Research Fund of University Malaya for funding me to complete my studies.

Finally, a huge thank-you to everyone who has been a part of my life directly or indirectly supported and prayed for me along the way.

Hemalatha Chandrasekaran

March 2016