ACKNOWLEDGEMENTS

Completion of a doctoral dissertation involves the cooperation of several people. My heartfelt gratitude and thanks to all of them.

First of all, I am extremely grateful to my Research supervisor and guide Dr. K. Balamurugan, Professor, Department of Biotechnology, Alagappa University for his valuable guidance, insightful discussions, scholarly advice and continuous encouragement throughout my research work. He has been a tremendous mentor for providing me all the support and encouragement during the days I spent at the Department of Biotechnology, Alagappa University. My interaction and the constant feedback from him helped me to complete my Ph. D. programme successfully. My sincere thanks are due to him for all his help and support.

Dr. S. Karutha Pandian, Professor & Head, Department of Biotechnology, Alagappa University is a source of inspiration from the day I joined this department. The research ambience of the Department of Biotechnology under his leadership is an encouragement to all research scholars and I am one among the beneficiaries. My thanks are due to him for offering me a research environment of this nature.

My thanks are also due to Dr. A. Veera Ravi, Dr. M. Ramesh and Dr. K. Pandima Devi, Associate Professors, Department of Biotechnology, Alagappa University for their interaction and inputs at various stages of my doctoral work.

I owe a great deal to my senior scholars and lab mates Dr. B. Sivamaruthi, Dr. S. Durai, Dr. P. Kesika, Dr. G. Jebamercy, Dr. B. Vigneshkumar, Dr. Kamala Devi, Mr. Prasanth M Iyer, Mr. S. Marudhu Pandiyan, Ms. L. Vigneshwari, Mr. Dilawar Ahmed Mir, Ms. R. Sharika, Mr. B. Balasubramaniam, Ms. M. Pooranachithra and Dr. M. Mohana. I acknowledge their support during the course of my research experiments.

My heartfelt thanks are to my fellow scholars Mr. S. Marudhu Pandiyan and Mr. Prasanth M. Iyer, who have always been there for one another and have taught ourselves and each other many new ideas and issues related to our research. I know that I could always ask them for any help and opinion on lab related issues which they readily shared without hesitation and such a support system enabled me staying sane.

I should mention here the support I received from my hostel mates and research scholars Dr. M. Bhuvana and Dr. D. Viszwapiya. After completing tiring experiments in the lab, the refreshing deliberations with them enriched me. I gained a lot from them through their personal scholarly interaction and suggestions at various stages of my research programme.

My friends Dominic Bharath Kumar and P. N. Manikandan were a source of inspiration and encouragement. I record my thanks and appreciation to my project students T.
Thirukumari, V. Deepa, R. Vikneswari, S. Deepika and T. Gowripriya for their technical assistance and help they rendered during my experiments in the lab.

I extend my thanks to the non-teaching staffs Ms. V.P. Malathi, Mr. G. Seenivasan, Ms. Amarajothi and Mr. S.P. Muthukrishnan for their cooperation.

I gratefully acknowledge the financial assistance in the form of Junior Research Fellowship extended by DST- SERB. I am also grateful for partial financial assistances of Bioinformatics Infrastructure Facility, Alagappa University funded by the Department of Biotechnology, Ministry of Science and Technology, Government of India (No-BT/BI/25/015/2012), DST PURSE [Grant No. SR/S9Z-415/23/2010/42(G)], FIST [Grant No. SR-FST/LSI-087/2008] & SAP-DRS1 [Grant No. F. 3-28/2011(SAP-II)]

My family friend Mr. Prem Kumar is a well-wisher from my childhood days. His guidance on my academic pursuit at various stages helped me choose the right choice among several alternatives.

My brother Sanjith U has been my best friend all my life and I love him dearly and thank him for all his advice and support. Away at home he constantly encouraged me and made sure that I successfully complete my research programme.

Last and never the least a special thanks to my parents. Words cannot express how grateful I am to my Father M. Udayakumar and Mother U. Sujatha for their never ending support and for all the sacrifices they have made on my behalf. Their prayers for me were those that sustained me up to now. At this moment I remember and thank all my kith and kin for their blessings.

Above all, I owe it all to God Almighty for granting me the wisdom, health and strength to undertake this research assignment and empowering me to its completion.

PRITHIKA. U