Acknowledgements

It is with profound feelings of respect and reverence I express my indebtedness and heartful gratitude to my guide, Dr. B. Rajasekhar Reddy, Professor and Head, Sri Krishnadevaraya University, Anantapuramu. I am extremely indebted to him for providing necessary infrastructure and resources to accomplish my research work. I am very much thankful to him for picking me up as a student. I have been amazingly fortunate to have an advisor who gave me the freedom to explore on my own and at the same time the guidance to recover when my steps faltered. His patience and support helped me overcome many crisis situations and finish this dissertation. I hope that one day I would become as good an advisor to my students as he has been to me.

I gratefully acknowledge the faculty of the Department of Microbiology, Prof. K. Venkateswarlu (Rtd.), Prof. R. Ram anjaneyulu (Rtd.), Prof. P. B. B. N. Charyulu (Rtd.), Prof. V. Rangaswamy, Principal, Sri Krishnadevaraya University and Prof. B. Venkatappa, Chairman, Board of Studies in Microbiology, for their encouragement and support which have provided good and smooth basis for my Ph.D. tenure.

I take this opportunity to sincerely acknowledge the Department of Science and Technology (DST), New Delhi, for providing financial assistance in the form of INSPIRE Fellowship which buttressed me to perform my work comfortably.

Most importantly, none of this would have been possible without the love and patience of my family. My immediate family, to whom this dissertation is dedicated to, has been a constant source of love, concern, support and strength all these years. I would like to express my heart-felt gratitude to my husband Dr. K. Praveen Kumar. My extended family has aided and encouraged me throughout this endeavor. I have to give a special mention for the cooperation given by my sweet daughter K. Ananayaduring the last stage of my Ph.D.
Iamthankfultomy senior research scholars, Dr. M. Srinivasulu, Dr. P. Srilatha, Dr. K. Monika, Dr. G. Venkata Subba Reddy and Dr. G. Jaffer Mohiddin and P. Vasundhara for their help.

My warm appreciation is due to all my research colleagues G. Ramanjaneyulu, A. Ramya, M. Rekaha Padmini, P. Ramanamma, B. Anuradha, A. Harinatha Reddy, G. Nageswari, D. S. Vani Sri, M. Soumya, and D. Seethal Kiran for their cooperation throughout my research work.

I would also like to thank Dr G. Satheesh Kumar and G. Praveen Kumar Reddy for helping me to carry out part of my research work.

Words are short to express my deep sense of gratitude towards K. Dileep Kumar who extended brotherly love towards me and B. S. Shanthi Kumari during the inevitable ups and downs of conducting my research.

I would also like to extend huge, warm thanks to my friends Nagamani, Leela Shivaranjani, Sravanthi, Amrutha and Sowjanya, for their love and affection.

I extend my thanks to the non-teaching staff of the Department of Microbiology for their cooperation during my research work.

I would like to pay high regards to my father **K. Y. Ramaiah** and my mother **K. Y. Parvathi**, brother Sai and my sisters Kalyani, Chaithanya, Sravanthi and Praveena for their sincere encouragement and love throughout my research work and lifting me uphill this phase of life. I owe everything to them. Besides this, several people have knowingly and unknowingly helped me in the successful completion of this project.

Finally, I bow my head to the lotus feet of my Parents, Guruji, to my Lord and Savior, and to Sri Krishnadevaraya University for giving me this golden opportunity.
K. Y. Usha