I convey my sincere gratitude to my mentor and supervisor, Professor Samir Kumar Mukherjee, Department of Microbiology, University of Kalyani, West Bengal, India, for his valued supervision, persistent support, and constructive criticism throughout my research work. He has truly been a great source of inspiration, insight, input and caring gesture. The knowledge he has imparted and patience he has displayed were vital for completing this study.

I am especially thankful to the Principal Dr. Puspitaranjan Bhattacharya, Vijayagr Jyotish Ray College, Kolkata, for constant encouragement and for permitting me for going through this Ph.D. work.

I also thank Dr. Keka Sarkar, Associate Professor and Dr. Ekramul Islam, Assistant Professor, Department of Microbiology, University of Kalyani, for their support.

I am indebted to the Department of Life Sciences, Jadavpur University, Indian Institute of Chemical Biology, Kolkata, Indian Association for the Cultivation of Science, Kolkata and Central Glass and Ceramic Research Institute for providing me instrumental facilities whenever required. I would like to express my deep sense of gratitude to Dr. Probal Dasgupta, Scientist, Indian Association for the Cultivation of Science for helping me analyzing some of the results.

A real heartfelt thank is specially due to Dr. Sk Tofajjen Hossain, Department of Microbiology, University of Kalyani, for his patient and continuous support and suggestions. I would also like to thank Dr. S. Sinha, Dr. G.B. Sau and Dr. Swagata Chatterjee for their encouragement.

Thanks are also due to all my lab mates in the Department of Microbiology, Kalyani and my colleague Dr. Shilajit Barua in the Department of Microbiology, Vijayaghr Jyotish Ray College, Kolkata.

I acknowledge the administration of the University of Kalyani for allowing me to pursue this work and for approving my candidature for the enrollment in the Ph.D. course in the Department of Microbiology.

I would also like to acknowledge the financial grant for a minor research project approved by the University Grants Commission, Government of India, to me to complete the work. Without the grant, it would not be possible for me to conduct this work.

I would like to thank some of my post–graduate students in the Department of Microbiology, Vijaygarh Jyotish Ray College, Kolkata, Pijush Saha, Anurag Shandilya, Indrajit Dutta and Ayan Kayal for their untiring help during the course of my research work.

I also extend my thanks to all of the non-teaching staff members of the Department of Microbiology, Vijaygarh Jyotish Ray College and Department of Microbiology, University of Kalyani.

I would like to express my deepest sense of gratitude to my parents and parents-in-law for their constant support and encouragement. Lastly, but not the least, I acknowledge the painstaking support received from my wife Arpita Das and my beloved daughter Pratyusha; without their unconditional help, support and encouragement, I could not be able to complete my work.

(Prasenjit Das)