I feel privileged and gratified to express deep and sincere sense of gratitude and indebtedness to my research guide Dr. (Mrs.) Dipali Devi, Associate Professor, Seri-biotech Unit, Life Sciences Division, Institute of Advanced Study in Science and Technology (IASST), Guwahati-35 and for the constant, constructive and able supervision in each and every stage of my research which made me able to prepare this manuscript and Dr.(Mrs.) Rupjyoti Bharali, Professor and Head, Department of Biotechnology, Gauhati University, Guwahati-14, for the proficient guidance in each and every aspect of my research work.

I avail the opportunity to acknowledge Prof. Joyanti Chutia, Ex-Director, IASST for her kind co-operation and permission to carry out the research work at Seri-biotech Unit, Life Sciences Division, IASST and Dr. Jibon Kotoky, Ex-HoD, Life Sciences Division, IASST, Guwahati. I would also like to sincerely thank Dr. Kanak Chandra Baruah, Ex-Director, Forensic Sciences Laboratory, Shillong for the valuable advice and guidance.

I owe my obeisance and gratefulness to the Gauhati University Authority and Department of Biotechnology for facilitating me for fulfillment of necessary formalities to carry out this work. Cordial co-operation and useful suggestions from the members of the teaching staff of the department and immense help and co-operation from the office staff are also acknowledged.

Thanks also go to all the faculty members, research scholars and staff members of IASST, particularly Dr. Bijit Talukdar, Dr. Phulmani Choudhury, Mousumi Saikia, Manasee Choudhury, Kishore Haloi, Monikankana Kalita, Anurupa Goswami, Dr. Nandana Bhardwaj, and specially Mr. Subrata Goswami and Mr. Bolin Das for their help and support. Special thanks go to Dr. Rangam Rajkhowa, Scientist, Deakin University, Australia, for his extended help, support and advice in every possible step
during this work. Dr. Ramesh Nath, Assistant Professor, Dhing College, Nagaon, Dr. Mukul Deka, Cocoon Marketing Inspector, Odalguri and Dr. Dulal Ch. Baruah, Assistant Professor, Goalpara College need special mention for their help.

Thanks also go to my friends, Himjyoti Dutta, Manashree Sharma, Kaustuv Patowary, Ankita Deka, Lachman Thapa, Ananya Mahanta, Manoj Kr. Das, for their help during the research and constant moral support and encouragement.

Last but not the least, thanks are due to all my family members especially to my father, who never stops inspiring me, my wife Pallabi, sister Ananya and my 7 month old son Kairav, whose smiling face is a spontaneous source of encouragement to me. At this instance, I would like to fondly remember and thank my mother because of whom I was attracted to the science field and to pursue research. I would also like to thank all other well-wishers whose name may not have been mentioned here but none have been forgotten.

(Saranga Dutta)