ACKNOWLEDGEMENTS

At this moment of accomplishment, first of all I express my deep sense of gratitude to my guide, Dr. Bhagyalakshmi Neelwarne, who laid a very strong foundation for my research career. This work would not have been possible without her guidance, support and encouragement. I hope that I could be as lively, enthusiastic, and energetic like her and to someday be able to guide researchers. Under her guidance I successfully overcame many difficulties and learned a lot from her.

I am also extremely indebted to Prof. Ram Rajasekharan, Director, CFTRI for providing necessary infrastructure and resources to accomplish my research work.

I take this opportunity to sincerely acknowledge the Council of Scientific and Industrial Research (CSIR), Government of India, New Delhi, for providing financial assistance in the form of Junior Research Fellowship.

I gratefully acknowledge Dr. G.A. Ravishankar, Dr. R. Sarada, Dr. P. Giridhar, Dr. Nandini P. Shetty, Dr. Sandeep N. Mudliar, Dr. V. S. Chauhan, Dr. Paramesha for their valuable suggestions and support during presentation times. And I also thank full to Mrs. Karuna and other staff members, Shivanna, Narayan, Channa Gowda and Vijay who have always been helpful.

I am thankful to P. L. Mukund and R. Hareesh for the help in HPLC analysis at Central Instrument Facility, and Dinesh and Arasu for providing rats at the Animal House Facility. I acknowledge the timely help and cooperation of other supportive departments staffs.

I am grateful to my seniors V. Lokesh and Avinash Kumar for teaching me the basics of gene cloning and expression, and other seniors, G. Manjunatha, Gururaj, Padma Mallya, Shibin, Anila, Santhosh Kumar, Ramesh Saini, Mallikarjun Gowda, Intiyaz Khan, Akitha Devi, Akshatha Veugopal, Dayananda, Ramakrishna, Rangarao and Sridevi for the moral support given during my tough times in my research work and lifting me uphill this phase of life.

All my friends and colleagues in the PCBT department, Gyanendra, Chandrakanth, Sai Srivasthav, Shiv Shankar, Shambhu, Sarthak, Sunil, Daris P. Simon, Vinayak, Srvana, Manoj, Simmi, Kavitha, Sijil, Sinjitha, Sreekanth, Vidyasankar, Kirti, Pradeep, Darshan, Kumudha, Swarnalatha, Priyanka, Kiran, John Kiran, Sree Lakshmi, Mouna Sree, Sheeba, Mallikarjun, Deepak, Shahbaz, Sharath, Chandrakala, Namratha, Hithesh, Seema and Maneesh, have been kind enough to help and support me at all times whenever needed both in research and morally. I am thankful for the help rendered by the seniors and colleagues from other departments, Vipin, Bijinu, JP, Pradeep, Praveen, Padmaja, Raksha, Amrutha, Divya N, Snigdha, Denny, Reenachechi, Prasanth, Jini, Nithish, Chinnu, Sandeep, Nidhina and Dileep. I place on record my heartfelt thanks to all those people who made my stay at CFTRI a memorable one.

For helping with my thesis, I gratefully thank the Google, MS office, Scholars Point, ResearchGate and Zotero.

Last but not least, I would like to pay high regards to Divya, for her love, support and encouragement throughout my work.

(P. Bijesh)