Acknowledgements

I take this opportunity to express my deepest sense of gratitude towards all the noble souls who helped me during my Ph.D. It gives me great pleasure to express my deepest gratitude towards my research supervisor, Dr. Sandra Misquith for her advice, suggestions, enlightening discussions, constant encouragement and blessings throughout the course of my research work. Her valuable suggestions and freedom to try new ideas have helped me in making this work possible. I deem it a binding obligation on my part to extend my boundless tributes of gratitude and warmth of affection to her.

My sincerest thanks to Dr. Melwin Colaço for his immense support, strength and valuable suggestions throughout the course of my research. I am really grateful to him for critically proof reading my thesis and for introducing the quintessence of science and research in me.

I am beholden to Dr. B. Gopal (Molecular Biophysics Unit, Indian Institute of Science, Bangalore) who gave us the clone to initiate this work and provided facilities to carry forward this work with ease.

My sincere thanks to my labmate Mr. Syed Wajeed for helping to learn the molecular biology techniques and also being an emotional support to me all the time. Special thanks to Dr. Girish T.S. for helping me with the crystallographic trials and other techniques.

I am very much indebted to the former principal Dr. Fr. Ambrose Pinto S.J., and Dr. Fr. Daniel Fernandes S.J., principal and Dr. Fr. Praveen Martis S.J. rector, for having given me an opportunity to do my Ph.D work at St. Joseph’s college, Bangalore.

I sincerely express my gratitude to my Doctoral Advisory Committee members, Dr. Naveen Chandra (Head, Chemistry Department), Prof. Michael Rajamathi and all the faculty members of the Department of Chemistry, St. Joseph’s College Bangalore.

I thank Dr. Beatrice Sequeira (Vice Principal, St Joseph’s College), for all the help given during the time of my research. I would like to place on record my sincere thanks to my research mates, Dr. Vijayasankar, Dr. Venugopal, Dr. Nygil Thomas, Mr. Tony, Mr. James Arul Raj, Mrs. Kavitha Singh, Ms. Romila and Ms. Bhagya for their timely help and encouragement.
My deepest thanks to Wajeed, Nygil, Tony, Salman, Jagath, Sarath, Rajesh, Praveen, Sujeesh, Sam, Vijaysankar, Nobi, Shine Joseph and Shanto, for their invaluable emotional support during these years of my research.

My sincere thanks to Salman, Suneel, Lijo and Vinod for helping me to learn some of the bioinformatics tools in the course of my research work.

My heartfelt thanks to my uncle Dr. K. R. C. Nair, for proof reading the thesis and for his valuable suggestions during my thesis writing. I thank all my relatives, near and far, for their encouraging words.

Last but not the least I would like to thank my family. I am extremely indebted to my parents Mr. A.K. Bhaskaran Nambiar, Mrs. Shylaja Bhaskaran and my grandmother Mrs. Omana Sekharan whose prayers gave me strength every now and then which nurtured and motivated me to pursue this research. I am more than indebted to my elder brother, Mr. Nishanth Bhaskar, whose support and affection have brought me to this juncture. I also owe a deep sense of gratitude to my sister-in-law, Mrs. Navya Nishanth for her boundless and unconditional support. Also my angelic niece Nivedhya Nair whose smile brought a smile to my face even in my deepest frustration.

I bow my head in front of the Almighty for providing such an opportunity to work in science. Finally, I apologize for the omissions I made in my attempt to enumerate all those who have contributed in making this a reality.

I pray to ‘The Author of Life’ to keep me always under His blessings.

Vivek Bhaskaran