Acknowledgement

This thesis has been seen through to completion with the support and encouragement of numerous people including my well wishers, friends, and colleagues. At this point of accomplishment I would like to thank all those people who made this thesis possible and an unforgettable experience for me. It is a pleasant task to express my thanks to all those who contributed in many ways to the success of this study.

First and foremost, I would like to express my heartfelt and sincere gratitude to my research supervisor Dr. (Mrs.) Vaijayanti A. Kumar for all the advice, guidance, support and encouragement during every stage of this work. The confidence she had in me made to pursue the multiple roles of nucleic acids which always kept me energetic and interesting. Her energy, enthusiasm and scientific discussions are and would be the source of inspiration to realize my dream in this scientific world. I am highly thankful for her patience, motivation, timely advice and the continuous support provided during every stage of my research work. I could not have imagined having a better advisor and mentor for my doctoral study. Although this eulogy is insufficient, I preserve an everlasting gratitude for her.

I would like to express my thanks and appreciation to Dr. Moneesha Fernandes for her professional support and personal care. She was always beside me during the happy and hard moments, to push me and motivate me towards my goal. She was the one along with my mentor.

My special thanks to Dr. (Mrs.) Namrata Erande for her efforts and unconditional support in all possible ways during ups and downs in the course of this work and Amit for help during writing thesis.

I gratefully acknowledge Dr. (Mrs.) Anita Gunjal, and Mrs. Meenakshi Mane and Sunita Kunte for their constant support, encouragement and especially for passing on their years of experience in handling the DNA synthesizer and HPLC analysis.
I take this opportunity to offer my sincere appreciation to Dr. Anil Kumar for his support in all the ways and Dr. (Mrs.) Vandana Pore for her help and valuable suggestions.

My deepest gratitude to my teachers Krishna veni, Prof. H. S. P. Rao, Dr. C. R. Ramanathan, Dr. N. D. Reddy, for their inspirational teaching, guidance and blessings.

I also extend my sincere thanks to HOD Dr. Pradeep Kumar, Dr. C. V. Ramana, Dr. B. L. V. Prasad, Dr. Hotha Srinivas, Dr. D. Srinivas reddy for their kind help and encouragement during the course of this work. I am also very much thankful to Mrs. Shanta Kumari and their group members for their excellent support in MALDI-TOF, HRMS and LC-MS analysis. The kind support from NMR group and the LC-MS facility, Organic Chemistry Division are also greatly acknowledged.

I have high regards for my seniors Dr. Madhuri, Dr. Sachin, Dr. Seema, Harshit and Namrata for their unconditional support and help during my Ph D. Course. I am indebted to my colleagues Dr. Venu, Dr. Kiran, Dr. Anjan, Tanaya, Govind, Amit, Harsha, Manisha, Ragini and Gandhali for providing a stimulating and fun filled environment. Also I would like to thank Dr. Raman, Dr. Amit Patwa, Dr. Ashwini, Dr. Sridhar Kosgi, Dr. Gitali, Dr. Mahesh, Dr. Roopa, Dr. Manaswani, Pradnya, Tanpreet, Deepak, Satish, Nitin and Vijay for their help and encouragement. I thank Bhumkar for the laboratory assistance.

Thanks to All my friends

Manojkumar Varada