Acknowledgements

I would like to sincerely thank people who helped me either directly or indirectly in this thesis. Scientific research is a group activity. It is not possible without the help and suggestions of people.

I have no words to express my deep gratitude and sincere thanks to my research guide Dr. Mrs. Asmita Prabhune, who has always filled positive energy in me with her constant encouragement in my research work. Her inspiring guidance and constant motivation helped me to achieve goals in research. I am grateful to her attitude for giving me liberty in the work I have undertaken. Without her persuasion and interest, it would not have been possible for me to gain confidence that I have today. I salute her supporting attitude that has always led me to think and work independently.

I am thankful to Dr. Mrs. Archana Pundle for invaluable suggestions, constant support and help offered by her during my work.

I am also thankful to Dr. C.G. Suresh and Dr. J.K. Pal who has constantly observed the progress of my research and has given very important and timely suggestions during my assessments.

I would like to thank University Grants Commission for providing me financial assistance during my research work. I am grateful to the Director, National Chemical Laboratory, Pune and the Head, Division of Biochemical Sciences for providing facilities to carry out my work. I am thankful to all scientific and non-scientific staff members of Biochemical Sciences Division for their help.

I do not have words to mention the impact on me of Dr. Mala Rao, who has always appreciated my efforts in research.

It is my immense pleasure to express thanks to my labmates, Ambrish, Atul, Sharath, Sachin, Umesh, Sulabha madam, Ashwini, Asmita, Nupur, Reetika, Kasturi, Jayshree, Siddharth, Avinash, and Aparna for their help and cooperation in my work and also for making fun filled environment in lab. Special thanks are due for Ambrish, who helped me in the final stage of my thesis.

I also would like to thank all my friends in hostel, Manaswini, Shraeddha, Ashwini, Smita, Uma, Poorva, Meera, Maitri, Gitali, Maansi, Nitasha,
Priyanka and Gauri for their help and immense support during my stay in hostel. Our conversations in mess hall have been refreshing entertainment.

I specially would like to thank my friends, Bubhan, Sashidhar, Urvashi, Imraan, Rohtas, Purnima, Tonima, Viku, Pankaj, Pandey, Reeti, Atul, Gayatri, Nishant, Abhishek, Noor, Rishi, Somesh, Kanna for always being there whenever I needed them.

Friendship with Shailesh and Sneha is always memorable for their jolly companionship.

I owe special thanks to Mr. Chinmay Kumar Mantri and Mr. Sameer Srivastava for their timely help and suggestions about my work. They stood by me like a rock during my tough times and also they are a source of inspiration for me to complete my work successfully.

No words could express my special gratefulness to my family members. Without their love, patience, sacrifice, support and faith in this long journey, this work would not have been possible.

N. Sridevi