

Acknowledgments

It is my great pleasure to acknowledge my deep sense of gratitude to my research supervisor Dr. Arpita Desai for her valuable guidance.

I take an opportunity to thank Prof. A. V. Bedekar, Head, Department of Chemistry, Prof. S. R. Shah, Prof. Anjali Patel and Prof. Neelima Kulkarni, former Head of the Department of Chemistry for providing the laboratory and analytical facilities during my work.

I am thankful to The M. S. University and Sudeep Pharma “AACD” for financial assistance.

I am thankful to Prof. Neelima Kulkarni for interpreting the ESR spectrum.

I am thankful to Dr. Darshee Baxi and her students Ms. Foram Patel and Ms. Khushali Upadhyay, Department of Department of Biomedical and Life Sciences, School of Science, Navrachna University, Vadodara, for biological study.

I am thankful to Dr. Arul Mozhi, Head of the Department, Department of Pharmacology, Poona College of Pharmacy, Bharati Vidyapeeth, Pune, for *in vivo* study.

I am thankful to DST-FIST for NMR facility and DST-PURSE for SC-XRD.

I am thankful to Dr. R. G. Gonande and his team (CSIR-NCL Pune) for SC-XRD. I also thank SAIF-Chandigarh for HRMS analysis. I am grateful to SAIF-IIT Bombay for ESR, HR-TEM and FEG-SEM.

I especially thank Ms. Mayuri Shaiwale for SC-XRD.

I am thankful to my junior Ms. Meera Mori and colleagues.

I am thankful to all teaching and non-teaching staff.

I wish to thank my parents for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis.