

Acknowledgement

Today with humility, misty eyes and folded hands when I thank Almighty in these blissful moments, I am also expressing my innermost into words. Research is an arduous task that involves consistent and dedicated mind with persistent hard labour put into it. This can only be possible with His benediction and grace.

I take this golden opportunity to express a deep sense of gratitude to my esteemed Supervisor, Dr. Krutika K.Sawant, Professor, Pharmacy department, M. S. University of Baroda, Vadodara, for her guidance, kind co-operation, constructive critique, perpetual encouragement, timely advice, necessary facilities required for completing this studies and meticulous attention throughout the course of this work. Also the humanity shown by her has touched my life and would remain with me for entire life.

I express my sincere thanks to Prof. Ambikanandan Misra, Head, Pharmacy Department, for having provided me with the necessary laboratory facilities and congenial ambience.

With great reverence, I also express my debt of gratitude to Prof.R.S.R.Murthy and Prof. M.R.Yadav, for their kind guidance and valuable suggestions during my research work. Their efforts in chaneelising facilities have helped me a lot to complete this research work. It gives me immense pleasure to express my heartfelt thanks to Prof. S.H. Mishra and Prof. R. Balaraman Pharmacy Department, M. S. University of Baroda, Vadodara, for their kind guidance and cooperation during this study.

I wish to express my sincere thanks to Prof. (Mrs.) Rajani Giridhar, Prof (Mrs.) S J Rajput, and Dr. Rajashree Mashru, Pharmacy Department, M. S. University of Baroda, Vadodara for their support during this work.

My sincere thanks are due to the **Dean**, **Faculty of Technology and Engineering**, M. S. University of Baroda, Vadodara, for providing me with the necessary facilities required for my research work.

I wish to express my heartiest thanks to Dr. (Mrs.) Meera Venkatesh, Head, and Dr. (Mrs.) Aruna Korde, Scientist, Department of Radiopharmaceutical, Bhabha Atomic Research Center (BARC) for their guidance on radiolabeling and to carry out biodistribution studies at BARC.

I would like to thank Dr. Dilip Saoji, Director, Pharma Research, Lupin Research Park for cooperating with me. I would also like to thank Mr. Rajendra Nagori, Senior Research scientist, Wockhardt Research Centre, Aurangabad for cooperation and support during doctoral research work.

I am grateful to the Indian Council of Medical Research (ICMR), Government of India, for providing financial support as Senior Research Fellowship (SRF).

Gift samples of Saquinavir by Aurbindo Pvt. Ltd., Mumbai and Adefovir Dipivoxil by Cipla Ltd., Mumbai are greatly acknowledged. I would like to thank to The Director, Sophisticated Analytical Instrumentation Facility (SAIF), Vallabh Vidyanagar for carrying out DSC studies. Electrical Research and Development Agency (ERDA), Makarpura, Baroda is also acknowledged for help rendered in carrying out DSC and XRD studies. I would also like to thank to The Director, Sophisticated Analytical Instrumentation Facility (SAIF), and Vallabh Vidyanagar for carrying out DSC studies.

My heartiest thanks to Dr. Rajani Athavale, S.N.D.T. Pharmacy college Mumbai, Vinod Tiwari, Research Scientist, Ranbaxy Labs, Rajesh Patil, Research Scholar, U.D.C.T. for their help at different stages of my work.

Mere words are not sufficient to express my genuine appreciation to my most treasured friends Pradeep, Dipesh, Vijay and Ashutosh who helped me as and when required without giving second thought. Thanks are due to my seniors Pradeep Ghosh, Pramod, Vikram and Vijay sir for their help whenever needed. Thanks are also due to my friends and labmates, Munish, Khushwant, Sanjay sir, Raju, Pruthvi, Vivek, Tushar, Atul, Yogesh, Devendra, Vipin, Prudhvi, Smita, Neha, Yogesh, Sachin, Samir and Adhvait for making this time memorable, with lots of cherished reminiscences to look at back.

My heartiest thanks are due to all the non-teaching and supporting staff of G.H.Patel Building, Pharmacy Department, Kalabhavan, Accounts Department Faculty of Technology & Engineering and University office.

My heartfelt gratitude to my dearest parents for their kind blessings, unbound affection and constant inspiration. No thanks would be enough to appreciate and the moral support shown by my brother and bhabhi that I could complete my work without hassles. My special thanks to my Wife for her immense patience and creating enthusiasm and zeal in completing my research work. Also, I would like to thanks my Uncle, aunty, father in law and mother in law for their kind support and motivation.

Last but not the least I thank almighty for his unlimited favors showered upon me.