## **ACKNOWLEDGEMENTS**

To fulfill a dream, it needs to be first converted to an aspiration, then executed and further nurtured to accomplish into an achievement. The task of research is no effortless requiring ability, inspiration, patience, perseverance, blessings, good wishes and prayers. The task was not easy, but the journey was made easier by help, support, concern, stimulation and rejuvenation of precious populace. I would like to take this opportunity to offer my heartfelt thanks to a number of people without whose constant help and encouragement, this thesis would never have been possible.

First of all, I am heartily gratified to Honorable Sir Sayajirao Gaekwad, the founder of The Maharaja Sayajirao University of Baroda, for establishing such a wonderful and multidisciplinary education foundation.

I would like to express my deepest gratitude to my mentor and esteemed Supervisor, **Prof. (Mrs.) Sadhana J Rajput,** Dean & Head, Pharmacy Department, Faculty of Pharmacy, The M S University of Baroda, for her supervision, advice, and guidance from the very early stage of this research as well as giving me freedom to explore my ideas, timely impetus, requisite facilities and extraordinary experiences throughout the work. Her truly scientific intuition has made her as a constant oasis of ideas and passions in science, which exceptionally inspire and enrich my growth as a student, a researcher and a scientist. I am privileged to work under her guidance and improve my intellectual and managing skills.

I owe my deepest gratitude to Prof. R. S. R. Murthy, Prof. A. N. Misra, Prof. S. H. Mishra, Prof. R. Balraman, Late. Prof. (Mrs.) Rajani Giridhar Prof. M. R. Yadav, Dr. Rajashree Mashru, Dr. Hetal Thakkar, Mrs. Hemal Tandel, Dr. P. Nagar, Mr. S.P. Rathod and Dr. Prashant Murumkar for their valuable suggestions, help and necessary laboratory facilities whenever sought for.

I take this opportunity to sincerely thank the All India Council for Technical Education (AICTE), New Delhi for the financial support in term of National Doctoral Fellowship during this course.

I gratefully acknowledge the gift samples of Diacerein and Febuxostat provided by Wockhardt Research Centre, Aurangabad and Lupin Pharmaceuticals Ltd., Aurangabad, respectively. I also acknowledge the Sun Pharma Advance Research Company (SPARC), Vadodara, India for supplying gift sample of Hydroxy propyl - $\beta$ -Cyclodextrin, Roquette Pharma, U.S.A for giving gift sample of  $\gamma$ -Cyclodextrin, Lupin Pharmaceuticals Ltd, Pune for gift sample of ZrO<sub>2</sub> beads and Dr. Reddy's Laboratories Ltd. Hyderabad for gift samples of Poloxamer 188 and Poloxamer 407.

I take this opportunity to express my thanks to non-teaching staff members at Pharmacy department, Kalabhavan and Pharmacy department, G. H. Patel Building for their kind cooperation.

I wish to express my heartiest thanks to my dear friends Hardik Gandhi and Abhinesh Kumar for the help provided by them during in vivo experiments and cell line studies, respectively. I wholeheartedly thank them for their tireless efforts in all these studies without any constraint.

I would also like to extend my appreciation to my colleagues and friends Deepti Ruikar, Nasir Vadia, Greeshma Patel, Reshma Jain, Prachi Bhamre, Madhuri Baghel and Mohit Mahajan for their advice and their willingness to share their bright thoughts with me, which were very fruitful for shaping up my ideas and research.

I take great pleasure in thanking my dear friends Jigar Lalni, Kailash Petkar, Sadip Chavan, Amit Verma, Kiran Chodhary, Garima Joshi, Riyaj Tamboli, Anand Mantri, Mohan Murugaraja, Veenu Mundada, Riddhish Patadiya, Chintan Voram, Praveen Srivastava, Karan Mittal, Rahul Dhande and all others, whose name I might be missing, for their support and encouragement, the moment with whom cannot be forgotten.

I would like to avail this rare opportunity to articulate my genuine appreciation to my treasured friends Gajanan Deshmukh, Piyush Mundada and Manoj Sharma, for every ounce of effort they contributed.

Where would I be without my family? My family deserves special mention for their inseparable support and prayers. Whatever Endeavour I have put to complete this work, would not have been possible without their support. I wholeheartedly and deeply thank my father Mr. Rrajandra Kumar Pathak and mother Mrs. Asha Pathak for their never-ending love and support throughout the years and their encouragement and confidence in me. Words fail me to express my gratitude and emotions to my wife, my daughter, my brothers and bhabhis for their dedication, unconditional love and persistent confidence in me. I owe for their patience until completion of my dissertation.

Finally, I would like to thank everybody who was important to the successful realization of thesis, as well as expressing my apology that I could not mention personally one by one.