



Acknowledgements

I would like to express my deep gratitude to my guide, **Dr Sarita Gupta** for her constant guidance, ever-inspiring suggestions and constructive criticisms, which made this work a quality work. I am also very grateful to her for granting me the opportunity to learn and achieve experience from the present study. I still need to learn a lot from her.

I sincerely thank her and Ex-Head Prof. G. Naresh Kumar for providing me the infrastructure and other departmental facilities for my research purpose.

My special and sincere thanks to **Dr. Sharad Gupta** for his kind co-operation, valuable suggestions apart from the histopathological analysis as well as for evaluation of blood clotting assays. I am very grateful to **Dr. T. Rajamannar** and **Dr. Marathe** for allowing me to carry out certain experiments in Sun Pharma Advanced Research Center, Baroda. My special thanks to **Dr. Vinod Burade** for his valuable suggestions on my experiments. I am thankful to **Dr. Balaraman** for letting me avail the instrument facilities to carry out blood pressure measurement. I extend my thanks to Mr. Vaibhav for helping me with blood pressure experiment. Without his help it could not have been possible.

My heartfelt thanks to Dr. Bhonde who gave me an opportunity to learn cell culture techniques at NCCS, Pune. Without his help I could not have been able to carry out my work on islets of langerhans skillfully. I would also like to thank his Ph.D students Ravi, Mugdha, Smruti and Ruchi to make my stay at NCCS comfortable and enjoyable. NCCS not only gave me new and different scientific insight but also gave me a wonderful friend, Vishal Parekh. He has always boosted me scientifically as well as personally for my betterment. I would also like to thank Dr. Anand Hardikar for providing me certain crucial chemicals for islet isolation studies.

I sincerely thank all the teachers of the department Prof. Tara Mehta, Prof. S.S Katyare, Prof. S. D. Telang, Dr. M. D. Jani, Prof. Rasheedunnisa Begum, Dr. Jayashree pohnerkar, Dr. C. Ratna prabha, Dr.Pushpa Robin, Dr. Acharya, Dr. Laxmipriya and Dr. D. Suthar for their extensive help at various stages.

My Ph. D. would not have attained this shape without the help of my lab mates, especially Chirayu (Pandya sahib), Prakash, and Sanket with whom I shared most of my lab hours. I thank them for their help with experiments, discussions and critical analysis of the results, which always kept me inventive. Because of their presence (24X7) my long journey was very smooth and enjoyable. Singing sessions at with Rafi pillai are good memories. Chirayu made environment very light whenever it got tensed with his good sense of humor. Sanket is inspiration to me to think in the line of own business. Fun filled long working hours with them in lab are some unforgettable memories. Many thanks to Nidheesh, Anubha, Tushar, Akhilesh and Muskaan for their help in various ways, and also for many lab parties. All of them made my stay in the lab easier. I cannot forget the valuable contribution of all M.Sc. dissertation students Kinjal, Arpan, Minal, Suparna and Suranjana who worked with me enthusiastically and dedicatedly. Thanks to my lab senior Vihas and Jyoti for their prompt replies to my reprint requests and for critical evaluation of my manuscripts.

My friends Maulik, Leena and Mira were always there to support me, to criticize me and to guide me in different phases of my Ph.D which has shaped up my personality a lot. Their contribution in my Ph.D and life is unaccountable. Without them it could not have been possible to overcome tough time.

I truly cherished the company very good bunch of friends like Keyur, Sameer, Shajil, Vikas, Prashant, Gopit, Iqbal, and Vijay with whom I shared tea at circle. Thesis writing would not have seen completion without the help of Sanket, Hina, Aditi and Hemendra. They critically evaluated, formatted the drafts several times. I am really

thankful to them. They were always available during thesis writing, when I needed help the most.

I would also like to thank my seniors Jignesh, Subhash, Siddharth, Saiyed and Munjal. Many thanks to Jyotika, Divya, Jisha, Namita, Mukta madam, Minal, Purva, Purna, Krishma, Sonal madam, Praveena madam, Mitesh, Muskan, Radha, Prasant, Jitendra, Chanchal, Hemanta, Kavita, Mrinal, Swapnali and Rishikesh.

Thanks to my friend Dipali, Rishit and Jerry who has not contributed directly to the thesis but helped me to keep my social life alive. Also thanks to my M. Sc. colleagues Mira, Madhurima, and Vijender for their support.

Thanks to them administrative staff of the department. Especially, Maneeshbhai, Axita ben and Rameshbhai for providing chemicals, whenever needed. I also thank Milindbhai for their administrative help in dealing with official work and thesis submission. I would also like to thank Ramesh bhai, Vijay bhai and Narayan bhai for providing me animals time to time (whenever I needed) and make my long hours at animal house friendly.

Lastly, and most importantly, I wish to thank my entire extended family for providing a loving environment. Archit, Ankit and Avani, my siblings deserve special thanks for their love and for always giving me special consideration and keeping me in high spirits. During this journey I discovered the better-half of mine...Niketa. She proved to be very supportive and caring to provide me comfort, during those never-ending delays. Thanks a lot for her patience. I wish to thank my parents. I thank them a lot for their immense patience and confidence in me. I simply bow down to pay gratitude to my parents and to them, I dedicate this thesis.

Last but not the least, a special bow to the Almighty.