Acknowledgement

In this auspicious but long and turbulent journey I would like to convey my thanks to all that have contributed to my work, helped and supported me during my time working on this thesis.

Firstly I offer my salutation at the feet of Supreme Lord, whose grace and benevolence have been a beacon of light guiding me through the difficult of difficult times through the turbulent waters of life and have given me the courage and conviction to pursue science in its essence. It is his ever gracious presence that has helped me in meeting deadlines and completing this thesis. "I bow at his lotus feet and seek his grace in all what I do in future".

I appraise my deep sense of gratitude and indebtedness to my cogent, perspicacious and reverend supervisor of the present study, Dr. Ranjitsinh Devkar, Assistant Professor, Department of Zoology, Faculty of Science, The Maharaja Sayajirao University of Baroda. His invaluable guidance, inspiring discussions, and keen interest, shown during the period of research program culminated in the successful completion of this thesis.

I am extremely grateful to Professor. A.V.Ramchandran; Former Head, Department of Zoology and Dean, Faculty of Science, for his benevolent guidance, valuable advice, constructive criticism, liberal attitude and whole hearted encouragement.

Word's fails to express my deep sense to gratitude and sincere thanks to present and former Heads Prof. P.C. Mankodi and Prof. Geeta Padate for providing me the facilities for carrying out my research and constant support during the entire period of investigations.

No appropriate words could be traced in the presently available glossary to express my deepest gratitude and indebtness to my seniors Dr. Ravi Jadeja and Dr. Menaka Thounaojam for their guidance and bestowing me with knowledge. I gratefully acknowledge efforts, interests, vigilance, constant encouragement L support during the course of this study.

I am especially obliged to Prof. Sarita Gupta co-ordinator, DBT-MSUB-ILSPARE project ,Biochemistry Department, The M.S. Univeristy of Baroda, Vadodara for providing the facilities for Flow Cytometry and Microscopy.

My warm appreciation to my seniors Dr. Raktim Mukherjee, Dr. Niraj Joshi, Dr. Sudip Banerjee, Dr. Darshee Baxi, Dr. Premkumar Singh, Dr. Ansarullah and Dr. Kiran Morya.

The fun and laughter we shared in our own ways to make this difficult journey a life time memory which I will always cherish. Thank you for your love, constant encouragement and of course the fun you guys.

I wish to thank all my colleagues and lab mates, Tejal, Chandni, Nirjara, Sandhya, Bhavya, Bhavika, Khushali, Ashutosh, Zalak, Jaldeep, Arpita, Lipi and Juhi who have directly and indirectly associated with me in the work and all my friends in University campus for the nice time we had together. I express my sincere thanks to Dr. Biren Thakkar, Former Scientist at Zydus Research Centre, Ahmedabad and Dr. Virendrasinh Zala, former Scientist, Sun Pharmaceuticals Research Centre for their kind help by providing necessary animals for my animal experimentations.

I owe special thanks to Ms Shweta, Ms. Sarmita, Ms. Kavita and Mr. Kapil without whose help and efforts writing and completion of thesis would not have been possible. Also I would like to thank a special individual, my friend Jaymesh, with whom shared a special bond that I will always cherish along with all his support and cooperation to accomplish my research work.

Special thanks to the clerical and academical staff, Mr. Sangeet, Mr. Shailesh, Mr. Hemant, Mr. Rajesh, Mr. Hitesh, Mrs. Urmila for their generous cooperation.

Finally I am also very thankful to my senior, best friend and husband, Dr. Dipak Patel, without his support and combined effort, completion of this work would not have been possible. I thank him for being a continuous source of inspiration, which always encouraged and motivated me in my work.

Last but not least, my heartfelt thanks to my father for the encouragement and financial support for my entire research work. I am also very thankful to my mother and sister for their never ending love, support and blessings, who always stood by my side and helped me to reach this platform.