

Acknowledgements

Though words are seldom sufficient to express gratitude and feelings, it gives me an opportunity to acknowledge those who helped me during the course of my study.

First of all, I bow with reverence to thank 'Lord Shiva' who enriched me with such golden opportunity and infused the power in my mind to fulfil the task assigned to me.

*At the outset, I would like to pay my tribute to the father and founder of the Banaras Hindu University, **Bharat Ratna Mahamana Pt. Madan Mohan Malviya Ji**, because of whom thousands of students put their step towards bright and prosperous future.*

*I welcome this opportunity to express my heartfelt gratitude and thankfulness to my admired supervisor, **Prof. Sanjay Singh**, Head of the Department for his valuable and critical suggestions, boundless enthusiasm, scientific acumen, scholarly guidance, excellent co-operation, active persuasion and supervision. His inspiration and kind support helped me throughout the period of my research. I always remain indebted for his diligent efforts and professional competencies, which helped me to become mature, helped in systemic completion of my research work. I feel very much honored and it has been really a great privilege for me to work under the mentorship of Prof. Sanjay Singh.*

*I am indeed obliged and grateful to **Prof. B. Mishra**, and **Prof. S. K. Singh**, Former Heads of the Department for allowing me to use the facilities in the department to carry out the research work and for their kind help during the course of my study.*

*I extend my heartfelt thanks to **Prof. R.S. Singh**, External Subject Expert, School of Chemical Engineering, IIT (BHU) for their encouragement and guidance.*

*It is my pleasure to thank all other respected faculty members of the Department of Pharmaceutics Engg. & Tech. **Prof. S. K. Srivastava**, **Mr. A. K. Srivastava**, **Prof. (Mrs.) S. Hemalatha**, **Prof. Sairam Krishnamurthy**, **Dr. Senthil Raja**, **Dr. Alekh N. Sahu**, **Dr. S. K. Mishra**, **Dr. (Mrs.) Ruchi Chawala**, **Dr. Ashok Kumar Maurya**, **Dr. Prasant Kumar Nayak**, **Dr. M. S. Muthu** and **Dr. Gyan Prakash Modi**, **Dr. Ashish Agrawal**, **Dr. Vinod Tiwari** and **Dr. S.K Jain** for their kind cooperation and valuable suggestions during the progress of my research work.*

*My heartfelt thanks to **all my teachers** right from school until now who shaped and motivate me to do research and all my well-wishes for their constant encouragement and wishes for my career.*

*My sincere thanks to **Dr. Biplob Koch**, Department of Zoology, Banaras Hindu University for assistance in protocol designing and guidance in in-vitro cytotoxicity studies. I am also thankful to **Nishant Kumar Rana** (student of Dr. Biplob Koch), for practical assistance and grade hospitality.*

*I would also like to thanks **Central Instrument Facility Centre (CIFC)** of IIT (BHU), Varanasi for providing analytical instrument facility to carry out my characterization studies. **Deshpande Labs**, Bhopal has provided me facilities for conducting in-vivo anticancer studies and I am grateful to them for their kind support.*

*The support extended by **Sipra Life Sciences Hyderabad**, India and **Evonik Degussa**, Mumbai, India for provide me sample of the drug and polymer is highly admirable.*

*My sincere thanks to **Mr. Ram Jiyawan**, **Mr. Sanjeev Kumar Singh**, **Mr. Yashwant Singh**, **Ms. Shyamali Ghosal**, **Mr. Chhote Lal**, **Mr. Virendra Kumar**, **Mr. NandLal**, **Mr. Madan Lal**, **Mr. Ram Hriday Pathak**, **Mr Akhila Nand Upadhyay**, **Mr. Arun Kumar**, **Ms. Archana Singh**, **Mr. Mohd. Jameel**, **Mr. Sunil Kumar Singh** and all other non-teaching staff of the department who had provided me all the requirements that I needed for my research work.*

*I owe my deepest gratitude to my parents for being constant source of encouragement and support thought my life. Most importantly, I would like to put my hearties warm regards and eminent indebtedness to my beloved **father**, whose never ending love, staunch moral support and blessings have encouraged me, more and more to thrive during my study which enabled me to reach this height in the journey of existence. To my **Mom**, I would not be who I am today without you. You taught me that I could achieve anything in life and supported me in every step I have taken. I would never have made it to this point if it were not for you. I really admire my sister **Jyoti Di** and brothers **Surya Prakash** and **Manmohan** for their extreme love and affection that will always remain close to my heart throughout my life.*

*Words fail to express my immense appreciation for my husband **Mr. Naveen Saini**, who has been a constant source of love, moral motivation and emotional support during the*

climax of my research works. His endless support by offering her personal time to carrying out the thesis work contributed immensely in shaping and completing my thesis. I would also like to pay deep gratitude towards my in-laws for their blessings and support during my post marriage Ph.D. life.

*I honor valuable suggestion and support of my Lob post-doctoral fellow **Dr. Amrita Srivastava**. I extend special thanks to my friends from department; **Pooja Mittal, Hitesh Kumar Dewangan and Harsh Vardhan** for being with me and helping in the compilation of this thesis. I would like to express my special thanks and indebtedness to my most supportive seniors **Dr. Parmeshwara Rao, Dr. Amit Mishra, Dr. Abhishekh Sah, Sanjay Kumar Singh, Vijayakumar, Ramoji, Priyanka** and labmates and juniors **Swati, Krishna Kumar Patel, Uddipak Rai, Meraj Anjum, Prem Shankar Gupta, Nancy Kapoor, Neha Singh, Deepika, Snehalata, Rinki, Subham, Sahil, Vipin, Manish, Apeksha, Arjun, Khushboo and Bhasker** for their suggestions, guidance, help and affection.*

*No amount of thanks shall be sufficient for my friends and colleagues **Amitabh Day, Mousami, Naveen, Pawan, Prabhash, Puneet, Suruchi, Sonam, and Satheesh**.*

Finally, I would like to thank everybody who was important in the successful realization of this thesis, as well as expressing my apology that I could not mention them personally one by one. I am also thankful to the small creatures of the GOD, mice who sacrificed their life during the completion of thesis research work.

Last but not the least, I express my deep sense of gratitude to Almighty God without his divine grace and blessing, above all this task would have been virtually impossible.

Date: 31 Jan 2019

Place: IIT (BHU) Varanasi

Lakshmi
(Lakshmi)