Acknowledgements

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.

Language is the most eloquent vehicle of human expression, yet on occasions one finds it difficult to get appropriate words to express an emotion fully. Speech fails me when I fumble for words to articulate my heart felt and sincere gratitude to my worthy supervisor, ***Dr. (Mrs.) Krutika K.Sawant,*** *Professor of Pharmaceutics, whose continuous encouragement, invaluable guidance, constructive criticism, precious suggestions, crucial help, benevolent attention and tireless efforts enabled me to execute this project successfully. I will never forget the spirit of sincerity, devotion, dedication, moral certitude and ethics she has inculcated within me during this period.*

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, Prof. M.R.Yadav, Prof. S.H.Mishra and Prof. (Mrs.) S.J.Rajput for their valuable suggestions and help whenever sought for.

I am indebted to Dr.K.A.Pathak, Head and Neck cancer division, TATA Memorial Cancer Hospital, Parel, Mumbai for his inputs in the project during its initiation. Gift samples of 5-Fluroruracil by Dabur India Ltd., Sahibabad and Methotrexate by Sun Pharmaceuticals Ltd., Mumbai are greatly acknowledged. I would also like to thank to The Director, Sophisticated Analytical Instrumentation Facility (SAIF), Panjab University, Chandigarh for carrying out XRD and FTIR studies. Electrical Research and Development Agency (ERDA), Makarpura, Baroda is also acknowledged for help rendered in carrying out DSC and XRD studies. I am thankful to the Head, Metallurgy Department, The M.S.University of Baroda for allowing me to carry out SEM studies at their lab.

I am thankful to the Head, Textile Department, The M.S.University of Baroda for permitting me to carry out tensile strength measurements at their lab. Mr.Bharatbhai Patel (Lab incharge) rendered generous help during these studies.

I am thankful to Dr. Anil K. Mishra for allowing me to carry out in vivo bioadhesion studies at Institute of Nuclear Medicine & Allied Research (INMAS), Delhi. I am also thankful to Mrs.Krishna Chuttani for her help in carrying out these studies.

Mr.Chandrakant Visawe, Histotechnicain from Baroda Pathology lab, Baroda is highly acknowledged for sharing his expertise during histology studies.

M/s Indu Blood bank, Baroda is acknowledged for providing plasma for analytical method development studies.

Thanks are due to Mr.M.J.Bhagya, Head, Pharmacology Division, Food and Drug Laboratory (FDL), Vadodara for providing rabbits and allowing me to carry out animal study in their lab. I am thankful to Mr.M.J.Parmar, Junior Scientific Officer-FDL, and Surya who helped a lot in animal studies with their skills.

Thanks are due to my seniors Pramod and Vijay sir for their help whenever needed. I avail this rare opportunity to articulate my genuine appreciation to my most treasured friends, Amit, Paresh, Shanti, Santosh who helped me as and when required without giving second thoughts. Thanks are also due to my friends and labmates, Anil sir, Sanjay sir, Sham, Khushwant, Tushar, Vipin, Vijay Kulkarni, Sachin, Prudhvi and Kamal for making this time memorable, with lots of cherished reminiscences to look at back.

*I am thankful to **Indian Council of Medical Research (ICMR)** for awarding SRF (Senior Research Fellowship).*

My heartiest thanks are due to all the non-teaching staff of G.H.Patel Building and Pharmacy Department, Kalabhavan.

Whatever endeavour I have put to complete this work, would not have been possible without the encouragement, support, love and prayers of my beloved parents, my brother and my wife.

Munish Kumar Dhiman