

ACKNOWLEDGEMENT

I take this opportunity to express my gratitude and thanks to many people who are responsible in one way or another for supporting me to reach this point in my life.

I extend my deepest gratitude to my guide and esteemed advisor, Dr. Krutika K. Sawant, Professor, Ex-Head and Ex-Dean, Faculty of Pharmacy for her unwavering guidance, insightful feedback, and mentorship with enthusiasm, vision, and motivation that have deeply inspired me. Madam's advice and guidance throughout my research work have resulted in extraordinary experiences. I consider myself very fortunate that she taught me critical scientific thinking and excellent editing of manuscripts and thesis.

I would also like to convey my thanks to my co-guide, Dr. Ajay J. Khopade, Vice President, Sun Pharmaceutical Industries Ltd., for his help, constant support, guidance, and expertise. His encouragement has been invaluable throughout the research journey.

I am deeply obliged to Dr. Ganesh Sangaiah for inspiring me to pursue Ph.D. and supporting me to get the admission.

I can't restrict myself to thanking Dr. Ganesh Jadhav for his constant support during my thesis work. I am deeply grateful to Dr. Saikat Mukherjee for his unwavering and consistent support throughout my thesis work.

I am very thankful to the senior management team, and human resources department of Sun Pharmaceutical Industries Ltd. for allowing me to do a Ph.D. along with my job.

I greatly appreciate and acknowledge the support received from various departments of Sun Pharmaceutical Industries Ltd. I also want to thank Mr. Saurav from the chemistry department and administrative staff of the Pharmacy Department for their help and cooperation.

I am profoundly grateful to Mr. Avik from the Analytical department, my colleagues of the Bio-pharmaceutics group Divyesh and Priya and Faculty of Pharmacy and Ph.D. batch-mates Sachin, Mrunal and Ami.

I want to express my gratitude towards Dr. Samarth Kumar, Dr. Gobardhan Bal, Dr. Rajkumar, Dr. Nagaraju Patro, Priyansh Pandya for their timely help and knowledge sharing which helped in a great way to complete this research work.

Lastly and most importantly, I would like to thank my family, who supported and encouraged me to follow my dream. Words are inadequate to express my reverence towards my mother for her moral support, endless patience and eternal inspiration to face any situation in life. I want to dedicate this thesis to my late father, who always wanted me to become a doctor.

I owe thanks to my wife and son for their continued and unfailing love, support and understanding during my pursuit of a Ph.D. degree that made the completion of my thesis possible. They are always ready to sacrifice their personal lives, especially Saturday and Sunday, for my convenience. I truly do appreciate it.

Finally, I take this opportunity to thank everyone who has been directly or indirectly associated with the successful completion of my research work.