

Expression of Gratitude:

This long venture of my PhD journey is a combined effort of many characters that played important role in one or the other step and helped me achieve my destination. This thesis would therefore be incomplete without expressing my gratitude to all of them.

I am very fortunate that I had Prof.G Nareshkumar , my research Supervisor who acted like Krishna, a sarathi without whom I could have never reached the end of this journey. He taught so many lessons not only about science but also about real life. “The best teacher is the one who never gives up being a student.” Sir, you are a real model for me who trained me to be patient in every circumstances. Apart from this you taught me to think out of the box and think not about the problems but about the solutions. You are always full with positivity and whenever we were in need we used to come to you. Thanks a ton for that. This gave me energy to keep going. Tea time was the most fruitful part as it helped us to envision the subject in depth along with enhancing our general knowledge. You acted like a captain and helped me cross the stormy ocean with ease.

I am highly grateful to Prof. Sarita Gupta (Head of the Department) for providing the basic infrastructural facilities and valuable suggestions during presentations.I extend my heartfelt thanks to Dr. Prakash Pillai (Dept.of Zoology) and Dr. Laxmipriya for their suggestions during annual presentations. I also take this opportunity to acknowledge Prof. G. Archana (Dept. of Microbiology). The variety of dishes cooked by you added colours to Lab party.

I am also highly indebted to Dr. Rasheedunnisa Begum, Dr. C. RatnaPrabha , Dr Devesh Suthar, Dr. S. R. Acharya, Dr. Jayshree Pohnerkar, Dr. Rajesh Singh, Dr. Ravi Vijayvargia for their support in course work and their valuable comments and suggestions at annual seminars which helped me a lot in improving my experiments.

I have been blessed with a great friend Archana (hyperactive species). Throughout this PhD journey, we were together except the weekends, so we have experienced all ups and downs together. A big thank you for tolerating my mood swings and giving me movies break whenever am freaking out. You gave me ear for

listening my whole crap and solving them actually. You are family for me now, without you life has no fun. Like a little zombie I will always keep on eating your brains out for my every professional and personal chats. Be with me always...

I was very fortunate to have wonderful seniors in the lab. I wish to acknowledge the help of all senior research students who helped me during my initial stages. Dr. Ujjwal, Dr. Sumeet, Dr. Ashish, Dr. Jeetendar are the great seniors who helped me get accustomed to the lab and made me realize in their own impressive ways that research is much more than mere experiments. Every colleague has contributed to my work in a number of ways. My special thanks to Parini and Riddhi who made great company. The aspiring new members Shubham, Akash, and Nikita made a great company and I wish for the best in their future ahead.

I take this opportunity to thank department seniors Dr.Radha, Laxmi, Divya, Dr.Krishma, Dr.Rishikesh, Dr.Shoaib and Dr.Tina who helped me in some or the other way during my tenure. I am thankful to my friends in the department – Ashlesha, Milton, Kritarth, Nirja, Arpi, Ragitha, Nirali, Roma, Mitul, Mala, Sejal, Ankita, Shahnawaz for their pleasurable company and I wish them all the very best. Thanks to my roommates Mansi, Ashlesha, Tina for being side to me during all nightmares. Ha Ha Ha.. I will never forget my Sunday buddy Ashlesha (Tayi) for her cooking tips. Game of Thrones thrills would be no fun without Tina mam. I got the chance to marry on time along with thesis all because of Mansi, thanks for all shopping, choco brownie sundae and being such an amazing roommate. Our late night conversations, green tea, maggi, pasta, bhel made me realize there is no end to insanity. I have no right to say but be my leech forever.

I would also like to thank Dr.Abhishek and Pradeep for HPLC experiments. Thanks are due to the office staff including Mr.Pethe, Akshitaben, Shaileshbhai, Manishbhai and including animal house members (Rameshbhai, Vijay bhai and Narayanbhai) for their help and guidance in all the official matters. Special thanks to Bhartiben, for always helping and for delicious food. Thanks to Anilbhai for keeping the lab clean and for making it wonderful environment to work.

I would like to express heartfelt thanks to the M.Sc. dissertation students Rikita, Purna who worked with me including for their contribution to the lab and making it a healthy place to work. I express my thanks to ICMR for funding this research.

I owe a lot to my parents, brother and my whole family for their constant support and encouragement at every stage of my personal and academic life. This thesis has been passed through several filterations and X-ray eyes of Satya. Thank you so much for having faith in me and helping me even when I was so cranky. Your constant endeavour for making me better just brings life in me. The list is endless. I acknowledge everyone and offer my sincere gratitude to all whom I have met during my journey, who have helped me knowingly or unknowingly.

Above all, I owe it all to Almighty God for granting me the insight, knowledge health and strength to carry out this research and enabling me to see its completion. I thank Him for helping me at every stage of my life.