

ACKNOWLEDGEMENTS

After an intensive period of nearly six years, today is the day: writing this note of thanks is the finishing touch on my thesis. It has been a period of intense learning for me, not only in the scientific arena, but also on a personal level. I would like to reflect on the people who have supported and helped me so much throughout this period.

Firstly, I would like to express my sincere gratitude to my advisor **Dr. Rajesh Singh** for the continuous support of my Ph.D. study and related research. The door to his office was always open whenever I ran into a trouble spot or had a question about my research or writing. I appreciate him for giving his students the freedom to think and apply our research fantasies on the bench. I am really grateful to him for being kind to understand my personal situation especially during the last year of my tenure and giving me a flexibility to work on my convenient time and allowing me to write thesis from home. I am fortunate to work under his guidance and have him as the mentor of my Ph.D.

Besides my advisor, I would like to thank my first research guide late **Prof. Bharat Bhooshan Chattoo** for inculcating research interest and confidence in me. Thank you is a small word to express my gratitude to my previous guide and mentor **Dr. Sathees C. Raghavan**. He has not only encouraged me to research and perform well but he has seed the values of self responsibility, hard work, discipline and dutifulness towards the work in me. He has built a strong foundation for a good and ethical researcher that will last forever.

I cannot forget the valuable help and support received from **Late Prof. Kailash Paliwal**. In spite of being the honourable director of the institute, he has been always down to earth, understanding of student's problem and working all possible ways to solve them. I am also grateful to our collaborators **Prof. Madan M Godbole, SGPGI, Lucknow** (for providing breast cancer patient's tissue sample) and **Prof . Peter M Chumakov, Member of RAS, Moscow, Russia** (providing DNA constructs needed to carry out my studies) for their timely help and support to my research work.

I would also like to thank the rest of my doctoral committee members: **Prof. Rasheedunnisa Begum, Prof. Sarita Gupta**, and **Dr. Vihas Vasu** as well as **Prof. R.J. Verma**, for their insightful comments and encouragement, but also for the hard question which incited me to widen my research from various perspectives. I would like to sincerely thank **Prof. and G Naresh Kumar, Prof C. Ratna Prabha, Prof. Sashikant Acharya, Dr. Jayshree Phoenekar, Dr. Laxmi Nampoorthi, Dr. Ravi Vijayvargia, Dr. Devesh Suthar, Dr. Desh**

Deepak Singh, Dr. Ashima Bharadwaj, Dr. Anju Papachan, Dr. TK Rajendra, Dr. Anant Tiwari, Dr. Reena Agarwaal, Dr. Sunil Singh, Dr. Neeraj Jain Dr. Rajani Nadugauda, Dr. Achyut, Dr. Chandramani Pathak and Dr. Rochika Singh.

I acknowledge **Council of Scientific and Industrial Research**, New Delhi, India for the research fellowship as well as **Department of Science and Technology**, India for the research funding. I sincerely thank DBT-MSUB-ILSPARE for providing the instrumentation facilities.

I express my sincere thanks to my past and present lab members as without them I would not have been what I am now. I appreciate their contribution in my personal and professional growth. First and foremost I would like to thank my lab senior **Dr. Dhanendra Tomar** from being the biggest critic and hurdle during the start of my Ph.D. to being the greatest help and support, just a text away, for any kind of guidance towards the end of Ph.D. I also thank my lab senior **Dr. Arun Kumar Singh, Dr. Aru Singh** (SGPGI, Lucknow) and **Mr. Hitesh Vasiyani** (Sunpharma) for their valuable research help. I would also like to thank my lab friends **Sripada Lakshmi, Paresh Prajapati, Pooja Dalwadi, Bhavana Joshi and Pooja Patel** for being my emotional support, helping hand, tea partners and “Masti” mates. I express my sincere thanks to **Kritarth Singh** for his timely scientific suggestions, valuable criticism, and his help with my research work towards the end of my Ph.D. I cannot forget to acknowledge my wonderful Juniors **Milton Roy** (Specifically for asking questions during seminars and brushing my knowledge), **Dhruv Gohil, Sapna Thakur, Kalyani** (my dissertation student and helping hand), **Kuheli, Monika, Anjali, Pampa, Disha and Hitarthi.**

I cannot forget my friends who have always been there in all the ups and down of Ph.D. tenure as well as life. I thank **Pooja Patel (2GB), Aneri Shah and Tanvi Patel** for being my family away from the family. I am very much thankful to Aneri’s family, **Aunty, Jainam, uncle**, my house owner and care taker **Shaku Ba** and her family and champa masi for providing homely environment. I also thank my maid **Jyoti Ben** and yoga teacher **Karishma** (an intellectual friend) for adjusting with my time and for various help and support. I would also like to thank my friends **Deval, Teena, Ganesh, Anupama, Ratnesh, Vikas, Nitesh, Ruchi, Sunil, Disha, Rajni, Priyanka Baloni, Sheetal, Rupa, Shweta Talreja, Rajesh** for filling my life with beautiful colours. I also would like to thank my seniors for being my teachers **Dr. Mridula Nambiar, Dr. Vikas Mehara, Dr. Sushma Meshram and Dr. Varsha Mohanan and CP sir.** I extend my thanks to all my friends and colleagues from department especially, **Mala, Tanvi, Gaurav, Komal (both), Manisha Farsodia (Botany), Shahnawaz, Arpi, Ankita, Sejal, Parini, Abhay, Regitha, Mitul, Archana, Dr. Krishma Tailor, Dr. Priyabrata**

Mohanty, Dr. Vijay Singh, Dr. Divya Nair, Mrs. Sindura, Dr. Vinod K, Ruchi, Dhaval, Kunal, Dr. Santosh Kumar, Kishu, Mansi, Neha Mam.

I further thank the members of the office especially **Pethe Sir, Akshita Mam and Rameshbhai Nare, Ramesh Kamle, Shaileshbhai, Vyashbhai** (for always helping me with My contingency bills), **Manishbhai, Sandipbhai, Anilbhai, Kiranbhai, Balwantbhai** for providing available facilities whenever I needed in the Department. I thank **Chiragbhai, Kaushik Bhai, Mukesh Bhai, and DADA** (Milind Bhai- especially during my registration time) for their support at university protocols. I extend my thanks to **Pooja and Komal** at Sara bhai centre for helping with luminometer and FACs facility respectively.

Cheers to the **3 pillars** of my success: **my mumma, my papa and my dearest husband (Maulik Kariya)** for being constant source of inspiration, motivation and hunter to make me run when I wanted to quit. I feel immensely lucky and blessed to have them in my life, as for without them being like they are I would not have been what I am. **Maulik** deserves special thanks for not only supporting me in carrying out my work but has also been a helping hand in households, a wall to protect me from social pressures, stress buster, in short **all in one**. Special thanks to **my mother in law and father in law** for allowing me to complete my Ph.D. after marriage and understanding me in all the given circumstances. I thank my cheerful siblings **Kuldeep** (making me smile out of any bad mood) and **Keyuri** (reason I could write and complete my thesis) for being my best friends. I extend my thanks to my **complete family** especially my loving **grandmother, Riddhi Di, Nirav Jiju, Pankita Bhabhi, Smit, my wonderful cousins and their little wonders, and masis** for being there for me. I cannot resist thanking my little nephew, **Parv**, (his naughty tricks and unconditional innocent love for me always spread smile on my face in any difficult situation) and **my baby on board** (the feeling and happiness of having him/her inside me itself is an inspiration and driving force to accomplish the task as soon as possible). Last but not the least I thank almighty God for being a hidden faith and force to achieve my dreams. I at the last thank each and every person who has contributed to my successful Ph.D. in any possible way.

Khyati Bhatelia