## <u>Acknowledgements</u>

This thesis is the culmination of my journey of Ph.D. which was just like climbing a high peak step by step accompanied with encouragement, hardship, trust, and frustration. It is my great pleasures to take this opportunity to express my sincere appreciation to various people who have contributed to this thesis and supported me in one way or the other during this amazing journey of my Ph.D.

Firstly, I would like to express my sincere gratitude to my advisor **Dr**. **Prakash Pillai** for the continuous support in my Ph.D study and related research. His guidance helped me in all the time of research and writing of this thesis and his patience, motivation, and immense knowledge was the key for completion of this gigantic task.

I would like to express my sincere gratitude to **Prof. P.C Mankodi**, Head of Department of Zoology for allowing me to access the facilities of the department and extending the help whenever required. I thank him for his constant encouragement and care during the entire course of my Ph.D work.

I express my heart-felt gratitude to all the faculties of this department, Prof. Pragna Paríkh, Dr. Vihas T. Vasu, Prof. B. Suresh Balakrishnan, Dr. Sunita Salunke, Prof. Dolly Kumar, Prof. Kauresh D Vachrajani and Prof. Geeta Padte, who have been very kind and supportive at times whenever I approached them. I would like to express my sincere thanks to Dr. R. V. Devkar for his all time support, valuable discussions and accessibility to his lab instrumentation as and when required. I would also like to thank Dr. Hetal Roy for her motivating words whenever needed. Special thanks to Dr. Parth Pandya for his help and support.

The word "Thank" is small for **Prof. A.V. Ramchandran Menon**, (Former Dean Faculty of Science) I think he is the best person to whom I met during my Research work, he has been constant source of encouragement and help me at every stage of my Ph.D and has been an inspiration to me. I would also like to extend my gratitude to **Dr. M.S. Mustak** (Mangalore University) for providing the generous support and for giving me opportunity to work in his research with his student, **Dr. Jit** Chatterjee. Dr. Jit also helped me a lot in thesis writing.

I would like to thank **Prof. Sarita Gupta, Head Dept. of Biochemistry** for her valuable guidance in DBT project. I sincerely thank her for permitting me to use Animal house facility of **Biochemistry department** and **Vikram Sarabhai Science Block-Central Instrument facilities.** I would also like to sincerely thank **Dr. Laxmipriya Nampoothiri** for her constant encouragement and suggestion throughout my Ph.D work.

I grateful to **DBT & DST-SERB, New Delhí,** funding sources for giving me the opportunity to carry out my doctoral research and for my International travel grant for attending conference and workshop.

I am deeply gratified to the research scholars of my lab (PPL group) for all the happy and sad moments we spent in and outside lab. My sincere thanks to my lab members, who not only provided the required support but also kept the scientific spirit high in the lab, which further helped me directly or indirectly to complete my Ph.D journey. I heartily thank to my lab partner **Lipi** for her endless support, encouragement and friendly assistance. My research work would never been completed without her input. She is God's gift for me. I will always be missing her company.

Thanks to **Kedar** who is like my brother and was always there for me whenever in need for all kinds of support. Thanks to **Juhi** for constant help and support. I also thank **Arpita** for her assistance, valuable suggestions, critical comments and discussions on experiments and presentation. I am also thankful to **Zalak** and **Ashutosh** for providing a stimulating and fun filled environment. I will always appreciate their contribution in my Ph.D work. I also appreciate the contribution of **Vishwa Tailor**, a dissertation student. I am extremely grateful to **Komal** who helped me in Confocal microscopy. She gave lot of time and expertise in capturing the best images of my research work. I will always remember **Foram** for keeping lively environment during her dissertation period.

I am also thankful to fellow lab mates, Jaymeshbhai who is not only senior of mine but always helped me as a elder brother, Bhavya di, Sarmita & Shweta who are true friends of mine and always gave me positive waves in my tough times. Kavita, a good researcher and good friend of mine, has always supported me in my research work. I would like to extend my thanks to Kapil, a nice friend of mine, Ankit, Hemadri, Kangkan, Apeksha, Aliasgar for their support and creating a stimulating and fun environment to make my stay in lab memorable. I wish them all the best for their future endeavors.

I also want to thank all the non-teaching staff of Dept. of Zoology for their cooperation during my entire PhD period. I am grateful to **Nitesh bhai** who helped me in administrative work. Sincere thanks to **Mr. Mayur** for his immense help in several official matters of the thesis submission. This thesis would not have been possible without the support of Rameshbhai, **Vijaybhai** and **Narayanbhai** in Animal house affairs.

Finally, I want to acknowledge the people who mean a lot to me, my parents, Mummy-Papa & Kaka-Kaki, for showing faith in me and giving me liberty to choose what I desired. I salute you all for the selfless love, care, pain and sacrifice you did to shape my life. Although you hardly understood what I researched on, you were willing to support any decision I made. I would never be able to pay back the love and affection showered upon me by my parents. Also I express my thanks to my brothers Sandeep, Pratik, Krunal and Chintan for their support and valuable prayers.

I thank the Almighty for giving me the strength and patience to work through all these years so that today I can stand proudly with my head held high.

Jaldeep Langhnoja