

Acknowledgement

This work has been conceptualized by Prof. B. Suresh and I thank him for giving me the opportunity to work with him on this project. He has always stressed on maintaining a positive work environment, which has been a major catalyst for my work. I am grateful to him for sharing his experience of over 30 years in research. In the course of my Ph.D. tenure, he has also given me the freedom to pursue various personal interests. I have gained exposure to not only good research practices, but also to teaching and other processes of the academic world. For this, I will always remain indebted to him.

I thank Prof. P. C. Mankodi, head of the department of Zoology, for the facilities provided. I am also grateful to him for handing me teaching assignments, since these have helped me diversify in my knowledge of biology.

The University Grants Commission and the Council for Scientific and Industrial Research, India for research fellowships during my Ph.D. course. The Ministry of Science and Technology, Govt. of India and the Gujarat State Biotechnology Mission, Govt. of Gujarat for supporting the research in the lab.

I have always had a fascination for lizards and the idea of working closely with this animal brought me to the idea of pursuing a Ph.D. I therefore dedicate all my years spent in Ph.D. to the lizard collection gang! Dr. Pratyush Patankar, Shashikant Sharma, Venus Patel and Jeetendra Gosai formed a fantastic (and of course, highly skillful in their own duties) team. All other lab members have also made their contributions to this cause and I remain indebted to each one of them. Animal collection in fact turned out to be the most enjoyable part of work! Thanks to Urja Verma for taking care of the feed for the lizards.

Pratyush sir has taken out time from his extremely busy schedule to proofread and edit the bibliography of this thesis. Shashi, Sonam Patel, Shweta Umar, Isha Ranadive and Nirja have also helped proofread the references. All this help allowed me to complete my thesis on time and in peace!

Central instrumentation facility of the Faculty of Science (funded by DBT-MSUB-ILSPARE programme) for providing the LC/MS-MS facility and the western blot equipment.

I joined the department for research with little prior formal education in Zoology. In the first two years here, I learnt a lot of Zoology, especially field-based Zoology, from my discussions and excursions with Pratyush sir, Naitik Patel and Urja. These experiences have given me confidence in areas of Zoology I was previously unacquainted with.

Dr. Mital Ravalji, more friend than colleague, has been a source of inspiration since there is always a lot to learn from her long-standing experience in research. Dr. U. K. Gowri Kumari has been a helpful guide and her joining the department has come as a good fortune for the lab.

Krishma Tailor Patel for inadvertently teaching me, during my M.Sc. course, how to contribute in the proper functioning and maintenance of a research lab. It later helped while setting up the lab after renovation.

Nirja Chaudhari, Sanket Charola and Jeetendra Gosai for extensive discussions on research and numerous other topics from science. Nirja has been especially helpful in troubleshooting with wetlab work.

Special thanks to Ashish Dhayani for sharing the enthusiasm of my work and promptly extending help, whenever required.

Jaimin Patel deserves special mention for being very resourceful to the lab and being the go-to man in case of urgent work requirements.

Adityarao Khanvilkar for helping me with solvent extraction prior to LC-MS/MS experiments.

Music, for making work enjoyable and removing the stress out of pressure situations. So thank you for the music, for giving it to me (ABBA, 1977; Andersson and Ulvaeus, 1977)

It has been a pleasure to share my workspace with Hiral Murawala, Shashi, Sonam, Shweta, Isha, Urja and Kashmira Khair. I wish them many good times in the lab and a lot of progress in their careers.

I dedicate this thesis to my parents Rajesh and Hemaxi Buch and my brother Chinmay Buch. To them, I owe my language ability and writing skill (and of course a lot more!). Moreover, they have not only allowed me to choose my path in life, but also encouraged me for the same. Chinmay's aptitude in science has kept my interest in science alive! Nidhi Vaishnav Buch has been an inspiring force added to my life at just the right time!

Nirja has the ability to keep me calm, composed and on the right track. Thank you for everything (above all, for putting up with my nature)!

I have a lot to thank the almighty for. I will always need blessings to carry on in life.

Pranav Rajesh Buch