

ACKNOWLEDGEMENT



This thesis is the end of my long journey in obtaining my PhD degree in Zoology. I have not traveled in a vacuum in this journey. I would like to express my gratitude to all those who gave me the possibility to complete this thesis.

*First a very special thank you to my supervisor **Dr. B. Suresh** whose help, stimulating suggestions and encouragement helped me in all the time of research and writing of this thesis. His expertise in regeneration improved my research skills and prepared me for future challenges. I learned to believe in my future, my work and myself by his guidance. Throughout my thesis-writing period, he provided encouragement, sound advice, good teaching, good company, and lots of good ideas.*

*I would like to give my special thanks to **Prof. Bonny Pilo** (initial supervisor during the beginning of my research, for sowing the seeds of thinking and problem solving: the present thesis is the rich foliage tree from that initial seed). Thank you doesn't seem sufficient but it is said with appreciation and respect.*

*It is a pleasure to thank **Isha Ma'm** without whose help this thesis would have been impossible.*

*I thank **Head of the Department, Prof. A. V. Ramachandran** for providing the infrastructure and animal house facilities for my research purpose. I also want to thank **The Maharaja Sayajirao University of Baroda** for granting me University Scholarship.*

I am thankful to UGC-DSA Programme in Zoology for extending several research facilities.

*I thank other teachers of the department for their helpful suggestions and comments during my study. Especially I am indebted to **Pragna Ma'm and Dolly Ma'm** for their critical comments in my thesis.*

*I am grateful to the entire non teaching staff of the department for assisting me in many different ways. **Pramarbhai** deserves special mention for helping in histological sections. **Sangitbhai** and **Urmilaben** for maintaining my accounts. **Hiteshbhai** and **Shalieshbhai** for any necessary need of the chemicals. I also want to thank **Hirabhai** for all his assistance in providing lizards, and **Dilipbhai** for all the support he rendered during the tenure of research.*

While ideas do hold the pivotal role in both basic and applied sciences, resources and academic inputs and encouragement hold a special significance. In this context, I would like to thank-

***Dr Jyotsna Dhawan** from the Center for Cellular and Molecular Biology (CCMB), Hyderabad for the generous gift of Anti Desmin and Anti Pan Myosin light Chain antibody along with the protocol and guidelines.*

Dr Gopal. C. Kundu from the National Center for Cell Science (NCCS), Pune for the generous gift of VEGF (Anti VEGF) antibody.

Dr. Snehasikta Swarnakar from the Indian Institute of Chemical Biology (IICB), Kolkata for the generous gift of MMP-2 (Anti MMP-2) and MMP-9 (Anti MMP-9) antibodies.

Dr. Sibsankar Roy from the Indian Institute of Chemical Biology (IICB), Kolkata for the generous gift of MMP-2 (Anti MMP-9) antibody.

Dr. Sajal Chakraborty from the University of Kalyani, West Bengal for the generous gift of organomercurial activator (APMA) for gelatin Zymography.

Dr. G. Padmanaban, former director of the Indian Institute of Science (IISc), Bangalore for his constant encouragement.

Dr. Philip Stephens and Dr. Ryan Moseley, Wound Biology Group, Cardiff University of Tissue Engineering and Repair from the Cardiff University, U.K. for their technical assistance and suggestions.

Dr. Christopher Overall from the Canada Research Chair in Metalloproteinase Proteomics and Systems Biology, University of British Columbia, Vancouver, Canada for his suggestions for the development of Zymography protocol and also Dr. Michèle Dalgalarondo from Ingenieur, INRA France for analysing the zymography gel and protocol.

Dr. Prashant Pansare Pathologist, SPARK, Baroda for giving expert opinion and peer reviewing the histological sections.

Particular thanks to research scholars from the Department of Microbiology: Kuldeep, Priya and Ketan for sparing valuable time from their work schedule and free access to all equipments and infrastructure in their department and also to Head Department of Chemistry for FTIR analysis.

*I would like to gratefully acknowledge the support of some very special individuals. They helped me immensely by giving me encouragement and friendship. They mirrored back my ideas so I heard them aloud. For this, special thanks to **Reena my dostar from Msc. Days to Ph.D, Hina my nakchidi, Jyotika and Deepika, my naughty roomies.** They encouraged me to grow and to expand my thinking. I was lucky to have such a good friends at work and the presence of such friends really made my journey of Ph.D a very memorable one.*

*I want to thank my all labmates (**Pratyush, Gauri di, Ambili di, Meena di**) for all their help, support, interest, valuable hints and who looked closely at the final version of the thesis for English style and grammar, correcting both and offering suggestions for improvement. Especially I am obliged to **Raktim** for all his help as a classmate and a labmate and as an all time photographer.*

*Thanks to my Fiancée "**Amit Sharma**" for giving critical suggestions while correcting my thesis and my would be **in laws** for their patient love which enabled me to complete this work.*

I wish to thank my friends Deeksha, Moomal, Ranjini and Sangi for all the emotional support, camaraderie, entertainment, caring and numerous fruitful discussions they provided.

My special appreciation goes to Navjot and Dr. Lilly for their friendship, encouragement and general support.

I wish to thank my entire extended family for providing a loving environment for me. My sisters Anita, Neetu, Preeti and my brothers in law Shaliesh, Neeraj and Raman, and my cute little nephews Devarshi, Rishi, Vedaant, Shourya and Cheery. My brother Pulkit also helped me unknowingly by asking when I will finish my work. Lastly, and most importantly, I wish to thank my parents. They bore me, raised me, supported me, taught me, and loved me. To them I dedicate this thesis- “my lovable family and my guide”

Priyanka Sharma