

ACKNOWLEDGEMENT

“Work hard in silence, let success make the noise”

First and foremost and the most important, I thank the Almighty for this golden opportunity to pursue a Ph.D. It was my dream that You alone made it fulfilled. Without Your grace, I am nothing and with Your blessings I have everything I wish for. I am blessed and I thank God every day for everything that happens for me.

*It is my great pleasure to extend my heartfelt and sincere gratitude to my guide, **Prof. Rasheedunnisa Begum**, who has guided, supported and encouraged me at each step of my Ph.D. with her knowledge and belief in me. I attribute the level of my degree to her motivation, guidance and efforts. My mentor embodies what sheer dedication towards one's profession means. Her patience and work style taught me to work in an organized manner. She not only guided me but shaped my career. I highly admire her regularity, sincerity towards work and strive to incorporate her principles in life to better myself and live a future life. I am forever indebted to Madam for entrusting me and the continued confidence in my ability to accomplish the same.*

I place on record my sincere obligations to HOD, Prof. Sarita Gupta for all her constant cooperation and for providing research facilities. I am also grateful to the current HOD, Prof. C. Ratnaprabha and entire teaching faculty for their research inputs and assistance which made my thesis more significant.

I am deeply grateful to my Doctoral committee members Prof. Sunil Singh and Dr. Rajesh Singh for their constant positive evaluation during all my annual presentations, valuable scientific suggestions and enriching my understanding of the mitochondria.

I am also gratified to all non-teaching staff members especially Pethe Sir, Arita Ma'am, Manish bhai, Shailesh bhai, Sandeep bhai and Anil bhai for the smooth functioning of all office work. Also, I wish to express my gratitude to Bhartiben for taking care of the funding agency related work.

I would also like to acknowledge DBT, CSIR and DBT-MSU ILSPARÉ for fellowship and infrastructure facilities.

My special thanks to Tina Ma'am for her constant guidance and positive attitude towards work. Not only did you make learning fun, but also the long discussions helped me scrutinize and comprehend several difficult concepts so far unknown. I have learnt a

great deal from you, be it operating complicated instruments or fine tuning experimental protocols for successful outcomes and for that I am always thankful. Cheers to our superb unbreakable team!

I take this opportunity to thank my **RBL family**. I express my thanks from the bottom of my heart to Sayantani, Nirali, Shah Nawaz, Nishant, Roma, and Jayvadan for making the lab environment most productive, enjoyable and memorable during my Ph.D. You all made our lab my second home. Thanks a lot for all the happy moments, love and amazing care you all took during my tough times. I am also grateful to Shoaib Sir and Mala for their experimental support and guidance. I am going to miss you all the special and funny moments we shared.

I wish to thank my lab seniors, Naresh Sir and Mitesh Sir for all their help to improve my scientific approach and writing skills. Also, I wish to thank my Dicty team seniors, Hina Ma'am and Jyotika Ma'am for all the Dicty work related guidance.

I am obliged to my hostel friends, Ruma, Mansi and Harshita for sharing each and every hostel moment, beautiful memories and awesome food. I also thank Jaimini Aunty for her love, support and providing me awesome home-made food.

I also like to thank my best buddies, Kanchan, Sheetal and Sunil for all the motivation and all the belief they had in me to achieve my dream.

I also take this opportunity to thank all my M.Sc. dissertation students Rittwika, Darshan, Abhishek, Nidhi, Aishwarya, and Shruti. You all have brought out the teacher within me and have been helping hands in my venture of Ph.D. Huge thanks to Darshan, for taking care of our AIF related MS experiments.

Thanks to all research scholars of the department for constructive criticism and fun. Special thanks to Milton for assisting in manuscripts evaluation and Dhruv for helping in the BN-PAGE experiment.

Next, I wish to thank my hostel warden Geeta Ma'am for all her support through-out my hostel life.

Finally, I wish to thank my walls of strength, beloved **Papa and Mummy and my grandparents** for their unconditional love, constant support and encouragement in all types of situations. Thank you for believing in me more than me and loving me so much. Thanks a ton for all your blessings and prayers. Without your support, my doctoral studies dream wouldn't have been possible. Special thanks to my sisters and brother,

Ashwini, Aparna, Rachita and Anand for their love and motivation during good as well as bad times.

*Last and not at all the least, thanks a bunch to my in-laws for all their extended love and care. Also, I owe a debt of gratitude to my special beloved person, **Hemant**. I thank God every day that I am blessed with the best life partner. You are my inspiration and positive energy. Though you were entered during my last phase of Ph.D., I can't thank you enough for all the love, care, support and motivation you have given me during my all ups and downs. Your presence made my Ph.D. climax happiest and most memorable.*

There is only one thing that makes a dream impossible to achieve: the fear of failure!!!