Acknowledgement

I found this particular page of the thesis as the page of opportunity to express my gratitude and sincere thanks to all.

I express my profound sense of reverence to my supervisor Dr. Karabi Datta for her excellent guidance, extensive support, motherly caring, and for providing me with an excellent atmosphere for doing research. Her vast experience in rice tissue culture and transformation system has been extremely beneficial for me. Thank you madam for your warm encouragement, critical comments, and everything! I could not have imagined having a better advisor and mentor for my PhD study.

I am feeling excited to express my gratitude to Prof. Swapan Kumar Datta. I am extremely grateful to him for allowing me to pursue the degree with his renowned team. Despite of his national responsibilities and very busy schedule, he was always accessible to me at any situation. His immense knowledge and thoughtful broad spectrum ideas have helped me a lot. I feel extremely lucky to be his student. I would like to express my heartiest thank to him for providing valuable suggestions and continuous help in all aspects. I could not have asked for better role model in my life.

I am thankful to the almighty for giving me a mentor couple like them. Thanks are due to the exposure and freedom during my research, they have given me. I could not be prouder of my academic roots and hope that I can in turn pass on the research values and dreams that they have given to me.

I would like to express my deep thank to Dr. Sailendra Nath Sarkar for his ever encouraging support, continuous help in every needs and valuable suggestions. In addition to science, I learnt
a lot from him about proper maintenance of lab decorum, instrument handling and use of chemicals efficiently and safely.

He is a kind of person who is always happy to help. Thank u very much sir!

I must acknowledge one name especially here Dr. Palas Kumar Chanda, who has taught me every basics of molecular biology experiment during his tenure as research associate. I express my deepest gratitude to his continuous caring towards me. His devotion towards research, healthy criticism and suggestions has imparted lots of impact on me. Thank u Palas Da for being available to guide me always!

It is my pleasure to acknowledge all my seniors in LRTC for extending their help in every single need and for being great seniors to me.

I am indebted to one of my best friend Dr. Kutubuddin Ali Molla (Kutub) for his tireless help throughout the time whenever needed. I am fortunate to have friend like him. Thank u Kutub.

I expand my thanks to my fellow lab members for their various helps, healthy criticism, keeping a nice lab environment and spreading happiness.

I am also thankful to Head, Department of Botany, and University of Calcutta for providing me all the administrative and departmental support. Thanks are also due to all the supporting staff of Botany Department for their needful help.

I wish to extend my sincere gratitude to all my respected teachers, Department of Botany, University of Calcutta for their needful support and kind cooperation.

I am also grateful to my school ans college teachers who laid seeds of enthusiasm and passion to pursue knowledge.
I can't imagine my current position without the love and support from my family. At this moment of accomplishment, first of all I pay homage to my late grandparents for their immeasurable love and blessings. I thank my parents, father Sunil Karmakar and my mother Kanika Karmakar for striving hard to provide a good education for me. I always fall short of words and felt impossible to describe their support in words. Many thanks to my sister for their love and affection!

Thank you all for everything!!

Subhasis Karmakar