Acknowledgement

It gives me immense pleasure to express my regards and deep sense of gratitude to Dr. Shyamal K. Goswami (Associate Professor), School of Life Sciences, JNU, with whom I began my journey of scientific research. I am extremely thankful for his esteemed guidance, constant encouragement, constructive criticism, valuable suggestions throughout the work. It's because of him that I could achieve this goal. Thank you sir!

I would like to acknowledge Prof. Rajendra Prasad for his valuable suggestions, advice and support.

I owe my sincere gratitude to Prof Debi P. Sarkar, Delhi University South Campus, for providing me chick embryos, without which I could not have completed my Ph.D.

I would like to acknowledge the Dean of School of Life Sciences, JNU, Prof Alok Bhattacharya for making all the school facilities available to me.

I also take this opportunity to express my thanks to Dr. Davopriya Choudary, Center of Biotechnology, JNU for his help and guidance.

Acknowledgement to Dr. Chinmoy Mukhopadhyay for his help and support.

I would also like to thank all the faculties of School of Life sciences and Special Center of Molecular Medicine for their guidance and support.

Due thanks also goes to Alexander Sir, Khan Sir, Sharma Sir, Mishra Sir and all others of the Central Instrument Facility, School of Life Sciences, JNU for helping out with my experimentations and thanks to Mr. R. N. Saini for his excellent photography.

I would like to thank office staff specially Meenu mam for their help and support in many official works.

I gratefully acknowledge the contribution of my labmates- Sindhu, Manna, Neel, Sanghu, Nandu, Dilip for their friendly support. They made it a pleasant experience to work in the lab. I spend my initial days with Sindhu, Neel and Manna. There presence gave me a lovely and homely atmosphere. I will always miss the lovely tea sessions that we all had together all these years in the lab. Manish, Anjali, Narendra, Kanupriya, Mahendran, Vikalap, Anita, Jyoti, Priya, Mansi, Gunjan, Amar, Shalini, Banishree, Kalicharan, Manmohan, Reena and vineet, who came as summer trainees or project fellows, need a special mention here for their help and association. The affection and care showed on me by all my labmates made my life in the JNU campus memorable.

I would like to acknowledge Satpal Ji for his whole hearted support, whenever I needed.

Acknowledgement to all my batch mates. The moments that I spend in the company of them can never be forgotten.

I thank all my friends in School of Life Sciences for their love, care and support.
Financial assistance from the UGC and CSIR in the form of JRF and SRF is gratefully acknowledged.

Special thanks to my better half Sandeep. I am especially indebted to Sandeep, who has always been with me during this work. Any words that I gather would be insufficient to convey my feeling for him. He was always there to make me comfortable in all the situations. My warm appreciation for being nearer to me during my good and bad days. Thank you Sandeep for everything!

Words are insufficient to express my feelings and love towards loving Naman- my son and my life..... He was always there to make me laugh at the hardest of moments. His cute talks always gave a push to my vitality.

I also take this opportunity to express my heart felt thanks to my mother in law and my sister in law, Pinky for their love and support.

I owe my sincere gratitude to my family- my sisters, jiju, brother, bhabhi and the whole kids' team. I can't say anything more for my family except that I wish they are always their to pamper me the way they have been doing so far ......... Thank you everybody for love and inspiring me at every step.

Last but not the least I owe all my years to the basic strength of my life........ My mother and my father. I could not have taken a step without their love, guidance and sacrifice in every form. Their inspiration and determination to see me a scientist was a major deriving force. Papa today you are not with me but your teachings that work hard at what you like to do and try to over come all obstacles because It is easy to negative about failures but it is much more healings to look at our selves and our failures in the light of experience, acceptance and growth, made me able to achieve my goal. Thank you Mummy and papa for every thing you did for me......... You are the best on earth.

Vibha Rani