Acknowledgements

I would like to thank my supervisor, Professor Keshav Kant Sahu, for his support, extensively and timeously going through my research work.

Also I would like to thank my mentor, Dr Afaque Quraishi, for his immense guidance and sincere support throughout the research work.

An acknowledgement to Professor KK Sahu and Dr A Quraishi for your kindness and for taking the time and going through the script till the end, I will forever be grateful.

Gratitude is also for Professor SK Jadhav for giving me the opportunity to do the research in School of Studies in Biotechnology, and for his moral support throughout the Ph.D. work.

To the faculties Dr KK Shukla and Dr NK Chandrawanshi, your kindness and support is highly appreciated.

A special gratitude to the staff of the School of Studies in Biotechnology, in particular Dr Shubhra Tiwari, Mr Ramesh Kumar Verma, Mr Raghuram Markam, Mrs Manju Bhagat and Mr Santosh Manikpuri, whose help is kindly acknowledged.

Dr Pramod Kumar Mahish and Dr Shriram Kunjam for caring and wanting the best for me; thank a lot.

To the friendships that I have made and bonds that will never be forgotten: Vikram Singh, Tikendra Kumar Verma, Jai Shankar Paul, Armiya Sultan, Vibhuti Chandrakar, Inderpal Kaur, Roseline Xalxo, Gyanmani Ekka and Shweta N; thank a lot to all of you.

Gratitude is also for all the research scholars of School of Studies in Biotechnology, and hostellers of Gandhi Hostel for their support directly or indirectly.

I also acknowledge, UGC, New Delhi, DST, New Delhi and CCOST, Raipur for providing financial assistance in the form of RGNF-SRF, DST-FIST and Research Project, respectively.

A special thanks to my loving family, my mother & father, and my brothers & sisters for their continuous support, love and prayers.

I would like to thank that supernatural power for giving me the strength and ability to stand-up in adverse conditions as well as resources and opportunity to complete the research work.

Ravishankar Chauhan