Acknowledgements

The years pursuing my PhD in this university has been very eventful. I have gained immense experience over this period. At the start, I would like to state my sincere thanks to my supervisor, Prof. Charu Lata Mahanta for her help, guidance and motivation. Without her guidance and support, my dream for PhD would have been just a dream.

Many thanks to Dr. P. Chattopadhyay, Head, Division of Pharmaceutical Technology, Defense Research Laboratory, Tezpur for his help and guidance in carrying out the *in vivo* study of my research work there. Also, thanks to Mr. D. Seth, Assistant Professor, Food Engineering and Technology Department, Tezpur University for his help and permission to use some of the equipments of his laboratory.

Special thanks to the members of the doctoral research committee (DRC) and the faculty members of the Food Engineering and Technology Department. Mr. Dipankar Kalita, Technical Officer and the rest of the technical staff of the department deserve special mention for their unconditional help. I want to thank particularly my laboratory members for their supportive and helpful attitude, especially to Mr. Nikhil Kumar Mahnot, Ms. Kanwaki Patwari and Mr. Himjyoti Dutta. It was really very pleasing to work alongside them. Thanks for creating a good working environment and for being generous to me.

To achieve something substantial in life is incomplete without the blessings and support of family. I would like to take this opportunity to express my gratitude to my father, my mother and my younger brother for their support, patience and unconditional help to achieve my dream of getting a PhD. I want to thank my family for making me feel in every step of my life that I have their support and love in fulfilling my dreams. I also want to thank another very special person, Priyanku for his support in every walk of life besides inspiring me to complete my work.

At the very lastly, I want to thank all of my friends as well as my well wishers who were always very supportive and helpful towards me.