Acknowledgement

In the name of God, most Gracious, most Merciful.
I wish to express my sincere appreciation to those who have contributed to this thesis and supported me in one way or the other during this amazing journey.
First of all, I am extremely grateful to my mentor and guide, Prof. Swapna Chaudhuri for her guidance and all the useful discussions and brainstorming sessions, especially during the difficult conceptual development stage. Her deep insights helped me at various stages of my research. I also remain indebted for her understanding and support during the times when I was really down and depressed due to personal family problems. Despite my lethargic attitude and endless list of casual leave she bore with me patiently. She has also provided insightful discussions about the research. I would like to appreciate the long hours of endless labours she provided during submission of manuscripts. Her dynamism is infectious and has gone a long way in developing scientific zeal in me. It would never have been possible without her. Thank you, madam, for allowing me the necessary freedom to explore my own ideas. I humbly acknowledge her master strokes on the outlay of each experimental design.

Very special thanks to the Calcutta School of Tropical Medicine for giving me the opportunity to carry out my doctoral research and for their financial support. This study was supported a research grant from DST Govt. of India [F. No.SR/SO/HS/-16/2007, 2008].

My sincere gratitude is reserved for Dr. Sagar Acharya for his invaluable insights and suggestions. I really appreciate his willingness to meet me at short notice every time and going through several drafts of my thesis. I remain amazed that despite his busy schedule, he was able to go through the final draft of my thesis and meet me in less than a week with comments and suggestions on almost every page. He is an inspiration. I would like to specially thank Dr. Sirshendu Chatterjee & Dr. Pankaj Kumar for helping me to develop the animal model of glioma and for providing a discussion platform during group seminars. Thank you Sagar da and Sirshendu da for showing the path to extreme dedication and hard work.

A good support system is important to surviving and staying during thesis period. Shunrita and Debanjan da, you both have been with me since the beginning and always with me as a “good friends”. These two friends formed the core of my research time in the ‘T11TS group’. Thank you, for all the assay buffers that you tirelessly prepared and I borrowed. Thank you for all their useful suggestions but also for being there to listen when I needed an ear. It has been
wonderful to exchange ideas and debate on scientific issues with Suhnrita and Debanjan da and always stretched my knowledge base.

Not only junior colleagues but friends Ankur, Saibal Da, Iman di, and Somnath you all made the lab feel like a second home. Thank you Saibal Da, for letting me feel discipline is a necessary virtue. I am also thankful to Dr. Anjan Basu Basu for helping with his particular skill in handling Flowcytometry equipment. The Flowcytometry room would not have been existed without him.

Words cannot express the feelings I have for my parents. I especially thank my mother, father, sister and brother. I would not be here if it not for you. My hard-working parents have sacrificed their lives for my sister, brothers and myself and provided unconditional love and care. I love them so much, and I would not have made it this far without them. My sister has been my best friend all my life and I love her dearly and thank her for all her advice and support. I know I always have my family to count on when times are rough. Special thanks to the newest additions to my family members, Akash and Sanjit (Munu) who both have been supportive and caring.

The best outcome from these past five years is finding my best friend, soul-mate, and my wife Preeti. I married the best person out there for me. Preeti is the only person who can appreciate my quirkiness and sense of humor. There are no words to convey how much I love her. She has been a constant source of strength and inspiration. Preeti has been a true and great supporter and has unconditionally loved me during my good and bad times. There were times during the past four years when everything seemed hopeless and I didn’t have any hope. I can honestly say that it was only her determination and constant encouragement (and sometimes a kick on my backside when I needed one) that ultimately made it possible for me to see this project through to the end. She has been non-judgmental of me and instrumental in instilling confidence. She has faith in me and my intellect even when I felt like digging hole and crawling into one because I didn’t have faith in myself. These past several years have not been an easy ride, both academically and personally. I truly thank Preeti for sticking by my side, even when I was irritable and depressed. I feel that what we both learned a lot about life and strengthened our commitment and determination to each other and to live life to the fullest.