Acknowledgments

I am deeply grateful to God, the father of all. I wish to thank him for the strength that made me keep standing and for the hope that kept me believing that this affiliation would be possible and more interesting.

It is difficult to overstate my gratitude to my Ph.D. supervisor, Prof. Vijay Prabha. With her enthusiasm, inspiration, versatile guidance and great efforts to explain things clearly and simply, it was possible to get through. Throughout my research work and thesis-writing period, she provided critical appreciation, encouragement, sound advice, good teaching, good company and lots of good ideas. I am grateful to her for endowing me with knowledge from her research experience and guarded me all through my research work.

I am very thankful to Indian Council of Medical Research, New Delhi for providing me financial support all through.

I am very thankful to the Chairperson, Prof. S.K. Soni, for providing me with all the necessary facilities, academic support and invaluable suggestions which inculcated the impetus for my research work. I extend my thanks to former chairperson Prof. Parveen Rishi and Prof. Vijay Prabha.

I am thankful to all the teachers of Microbiology Department.

I am very thankful to the non-teaching staff of the Microbiology department especially Pradeep Arora Sir, Mohan Sir, Ajay Sir, Ramesh Jain Sir, Baljinder sir, Rupinder Mam, Vijay Laxfimi Mam, and Ravi Sir for their kind cooperation.

This thesis would be incomplete without the name of Dr. Ravinder Sirohi who is my good friend and a perfect husband. Words are not sufficient to frame his contribution in my Ph.D. research work. His contribution started from the first day of my research work and last until the final print of this thesis. He provided guidance in my experimentation work and helped me beyond his limitations. I have learned many experimental techniques from him. His intellective and deep knowledge of subject helped me to overcome many experimental problems. His positive aspect towards life and people made me to forget the bitter taste of some experiences and look forward.
Ph.D. research work is a long journey and at some steps I felt very much upset, but it was his moral support which made me stand again and solve the challenges. I am thankful to him for his endless patience and encouragement when it was most required. He fully supported me for every trial that came my way. Without him, this thesis would not have been possible.

I feel really lucky to have good friends Kriti Di, Ujwaljitt Kaur, Reena, Amandeep Kaur, Kavleen Kaur. I am extremely thankful to all my friends who provided a stimulating and refreshing environment to learn and grow.

I extend my thanks to all my labmates, my seniors and my juniors.

My parents have been a major influence in all my successes. I would like to say a big thank you to them for the values and principles they have taught me and in fact, I dedicate this thesis to them. My special gratitude to my father Sh. Mam Chand Answal and mother Mrs. Saroj Answal who provided constant encouragement and their guidance all through my research work.

Words elude me in expressing thanks to my loving younger sister, Sonika (Deepu) and my brother Hitesh Answal (Sunny) who have given me unconditional love and support at every step of my life. My Deepu is the source of encouragement and motivation for me and my sunny is like a stress buster for my life. I feel really lucky to have siblings like you. Both of you are the blessings of God to me and will always remain in my heart as God’s most precious gift for my life.

I also wish a big thanks to my in-laws, for their support. Especially, to my mother-in-law and my father-in-law.

My loving thanks to my cushions Harsh and Janu. They loved me, entertained me and cared for me all through. Love you guys.

All are not mentioned but none is forgotten. Thank you, everyone......

Monika