ACKNOWLEDGEMENT

First of all, I bow my head with great respect to “GOD” with whose grace it became possible for me to complete my work.

I express my sincere thanks and deep sense of gratitude towards my supervisor, Dr. AJS Bhanwer, Professor, Department of Human Genetics, Guru Nanak Dev University, Amritsar. His dextrous guidance, constant encouragement and affection instilled in me the confidence to carry out this study. This work would not have reached its meaningful conclusion without his able supervision. I also feel honoured to express my profound regard and deep sense of gratitude to my co-supervisor, Dr. Vasudha Sambyal, Professor, Department of Human Genetics, Guru Nanak Dev University, Amritsar. Her guidance and benevolent attention have gone a long way in enabling me to pursue the work presented in this thesis.

My heartfelt thanks to all the faculty members of Department of Human Genetics, Guru Nanak Dev University Amritsar, Dr. Sharda Sidhu, Dr. Gursatej Gandhi, Dr. Badaruddoza, Dr. Kamlesh Guleria, Dr. Vanita Kumar, Dr. Anupam Kaur, Dr. Manpreet and Dr. Sanjana Mehrotra for their valuable guidance and support.

I would also like to specially thank Dr. Kawaljit Matharoo for her valuable time, constant help and advice all through the course of my study.

I would like to express my thanks to Dr. Punit Arora and Dr A.P Singh for providing the blood samples. I am also thankful to all the subjects included in the study as without their cooperation my research work would not have been possible.

I am grateful for the support and encouragement of the wonderful group of friends and lab mates Basanti, Yoginder, Rubina, Jasmine, Savjot, Jot, Maggi, Ruhika, Harkirat, Gagan and Gurvinder at Department of Human Genetics, Guru Nanak Dev University. I am especially thankful to my friend Nabodita who has helped me not only in statistical analysis but has given me support in my rough times. I would also like to thanks to wonderful group of friends in the hostel Manpreet, Rekha, Pooja, Aanchal and Rajwant as they have made my stay in the hostel a memorable one. I would also like to extend my thanks to office staff members specially Ramola sir at Department of Human Genetics, Guru Nanak Dev University Amritsar.
No words can suffice my feelings of gratitude to my parents Sh. R.K Sharma and Smt. Suman Sharma and Parents in law. Sh. Desh Raj Awasthi and Smt. Suman Awasthi who are my pillars of support, source of strength and inspiration. Their love and sacrifice have made me able to complete another task of my life. I feel highly pleased to acknowledge the love of my sisters Shweta, Ketika and brother Nalin. Their good wishes and encouragement have helped me to carry out the research work with enthusiasm.

I would like to thank Varun, my husband and true friend. His love, support and encouragement has helped me through tumultuous times. No words for my loving daughter Bhavya for giving me strength to pursue the course of study through her kidding deeds.

I gratefully acknowledge The Department of Science and Technology Govt. of India (No. DST/INSPIRE Fellowship/2009(xv)) for making my Ph.D. work possible by providing the required funding.

Shivani Vats