ACKNOWLEDGEMENT

First of all I am thankful to God for showing me the light and path in my life, for enabling me to learn, for giving me physical and mental strength, endurance and perseverance.

I would like to express my gratitude and profound respect, to my Ph.D. supervisor Prof. (Dr.) Geeta Hundal for her splendid and valuable guidance, constant encouragement and support that she provided me during my research period. Her profound knowledge, enormous enthusiasm, keen insight and analytical acumen are great source of inspiration to me. She has always been exceptionally supportive and encouraging towards innovative ideas and independent thinking, which has been of immense help in my personal and professional growth. I feel privileged and in fact, fortunate for being her student.

Very special thanks go to Prof. (Dr.) M. S. Hundal, without whom I would not have considered a career in research. He not only encouraged and motivated me but also provided me with direction and technical support and is more of a mentor, than a teacher. It was through his persistence, appreciation and positive outlook that I was able to complete my research work. I doubt that I will ever be able to find enough words to express my feelings, so I pay him my eternal gratitude.

I wish to record my regards to the Head of the Department, Prof. (Dr.) Manoj Kumar and Prof. (Dr.) B. S. Randhawa (former H.O.D.) for providing me the necessary infrastructure to carry out my Ph.D. work at Guru Nanak Dev University, Amritsar.

I especially thank Dr. Narinder Singh, Assistant Professor, Department of Chemistry, Indian Institute of Technology Ropar, Ropar, and Dr. Vanita Kumar, Professor, Department of Human Genetics, Guru Nanak Dev University, Amritsar for performing biological studies on my compounds and helping me to prove their usability in real life.

I owe my thanks to my lab mate Mr. Lovekaran Rana and my colleague Ms. Preet Shikha for their constant help and cooperation during my entire stay in the department.

Last but not least, I love my parents, who provided a carefree environment to me, so that I could concentrate on my studies. Although they hardly understood what Ph.D.
means or involves but were always there to give me their unconditional support. I owe everything to them.

Financial assistance provided by the CSIR and the UGC, India is gratefully acknowledged.

(Sanyog Sharma)