Acknowledgements

"In the name of ALLAH, the most beneficent and merciful"

At outset, I would like to acknowledge and thank Almighty ALLAH for giving me strength to complete this piece of work successfully. That could never be accomplished without His Mercy.

I would like to express my heartiest gratitude to my supervisor, Prof. Qayyum Husain, Department of Biochemistry, Faculty of Life Sciences, Aligarh Muslim University, Aligarh, for their invaluable guidance, constant encouragement, perpetual support and advice throughout my work and thereafter. His ability to probe beneath the text is a true gift and his rich scientific sweep has strengthened this study significantly. I will always be thankful for his wisdom, knowledge and deep concern he showed towards me. It has been an honour to work with him.

I express my indebtedness to Prof. Bilqees Bano, Chairperson, Department of Biochemistry, Faculty of Life Sciences, Aligarh Muslim University, Aligarh for her constant encouragement, moral support and for providing necessary facilities during my research work.

I would like to extend my gratitude to Prof. Masood Ahmad, Prof. S. M. Hadi, Prof. A.N.K. Yusufi, Prof. Nahid Banu, Prof. Imran Nasem, Prof. Riyaz Mahmood, Dr. Mohammad Tabish, Dr. Fahim Halim Khan, Dr. Farah Khan and Dr. Aabgeena Nasem for being so supportive and encouraging throughout the session.

I do not have words to acknowledge my lab mates Dr. Zoheb Karim, Dr. Rukhsana Satar, Dr. Humaira Ashraf and Dr. Shakesel Ahmad Ansari for their boundless help, motivation, encouragement and tremendous knowledge that they delivered me throughout my study. I feel without their guidance and moral support the completion of this thesis was an uphill task for me.

It gives me an immense pleasure to acknowledge my seniors, Dr. Shamsh Tabrez, Dr. Shaheeq Ahmad, Dr. Medha Priyadshini, Dr. Shahnawaz, Dr. Fahed, Dr. Mohd Aatif, Dr. Faisal Siddiqui, Dr. Aliya, Dr. Ashraf, Nida Apa, Safqat Apa, Ashreza Apa, Shoa Apa, Rauf Bhai, Kaisar Bhai, Husain Bhai, Haseeb Bhai and Azad Bhai for their countless help and support. I extended my humble thanks to Ejaz bhai for their endless support and kind advices during various phases of my research work.
My words of thanks will remain incomplete if forget to mention the name of my seniors and friends Sandesh Bhai, Iftikhar Bhai, Amit Bhai and Taqi Bhai who were with me during ups and downs of my research. Whenever I needed they have not only provided me the helping hand but also gave me their precious time and patience hearing and sorted out my problems.

I am grateful to Sandesh Bhai for their patience cooperation. He has always been there when needed. His support didn’t let me down even in the difficult phases of my research life. I certainly thanks to Asrar whom I shared nice moments of my life. His advices and suggestions are deeply appreciated. I express my heartiest thank to Gulam Rabbani for always being with me and solving my problems. He is a source of inspiration with his infectious enthusiasm and amazing outlook on research. I feel pleasure to express my extended thanks to Pragya Tiwari for her superfluous help and motivation.

It gives me an immense pleasure to acknowledge all my colleagues, especially Afsheen, Dilnaaheen, Maria, Samreen and Sana for their humble support and co-operation. Your kindness is really appreciated and always in my mind forever.

My heartfelt thanks goes to Abrar, Sadiq, Asfaq, Abu, Salman, Varun, Subhash, Ashok and Wajahat for taking on the monumental task of tolerating and bearing me and my problems, providing guidance, not only work related and caring so much to be special friends as well. I am also thankful to my concerned juniors, Nisar, Ahmad, Sheeraj, Sayeed, Aamir, Tariq, Furquaan and Farhaan for their cooperation during various phases of my research stints.

I must acknowledge the support of everyone at Department of Biochemistry as each one has helped me along this journey.

University Grant Commission, New Delhi is gratefully acknowledged for providing financial assistance during my research work.

Lastly, but most importantly, I would like to express my heartfelt and loving gratitude to my parents. Their love, care, and support did not let me down even in the difficult phases of my research work. No word can express my feeling for them. It’s their hard work, sacrifice, prayers which is bound in this thesis. I certainly owe a great debt of gratitude.

Mohd Jahir Khan