

Acknowledgements

*With a deep sense of gratitude and respect to **GOD** who has showered blessings enabling me to reach this stage in the journey of my life.*

*I wish to express my profound sense of gratitude to the President of the University **Late Prof. Diwakar Shastri**, and the Vice Chancellor of the university **Prof. Aditya Shastri** and present president of the university **Prof. Chitra Purohit**, for providing me an opportunity to carry out research work at this prestigious institute of international repute.*

*Conducting research in a multidisciplinary area such as this is not an easy task. It required support of so many people. There were many people from whom I had received interesting feedback and valuable suggestions. I would like to express my humble expression of profound gratitude to **Prof. Dharma Kishore** (my Ph.D. supervisor), for providing me an an inspiring guidance, encouragement, invaluable advice and moral support, without which it would have not seen the light of day. I am hounred to be advised by such a great personality.*

*I would like to express my deepest gratitude to **Dr. Jaya Dwivedi** (Head, Department of Chemistry, Banasthali University), for her valuable suggestions, perpetual inspiration and motivation. Along with this I am highly indebted to her for providing me the necessary lab facilities without which I would have not achieved my aim for its easily consummation, in a stipulated timeframe.*

*I am also thankful to all the respected teachers, **Prof. Sudha Shastri, Dr. Dinesh Kumar, Dr. Rajendra, Dr. Kavita Poonia, Dr. Manish Srivastava, Dr. Sudhanshu Sharma, Dr. Sudhesh Kumar, Dr. Sumitra Nain, Dr. Parul Khurana, Dr. Sonika Jain, Dr. Navjeet Kaur, Dr. Ved Prakash Verma, Dr. Shruti, Dr. Pyare Lal and Ms. Anamika Srivastava** for their kindness and blessings they bestowed upon me. I am deeply grateful to all the staff members of Department of Chemistry and Department of Pharmacy, Banasthali University for their support in this work.*

*My sincere thanks are due to **Dr. Deepjyoti, Microbiology Research Laboratory, Department of Biosciences and Biotechnology, Banasthali University, Banasthali** for providing me guidance in antimicrobial screening of the synthesized compounds.*

*I am very much indebted to **Mr. Ajit Singh, Department of Chemistry, University of Jammu** and to **Dr. Shreyansh Jain, RRCAT Jammu**, for providing analytical and spectral data of the compounds.*

*In experimental science like chemistry, laboratory facilities are indispensable for a successful research work. I am highly thankful to all laboratory assistants **Sh. Kishan Lal Lunia, Sh. Vishnu Sharma, Dr. Birbal Luniwal, Sh. Vinod Sharma, Sh. Alok Sharma, Sh. Rajendra and Sh. Mool Singh** for their generous help, goodwill and co-operation which they have extended in making the laboratory facility handy to me during the course of this work, to all the lab attendants **Sh. Lallu Das Swami, Sh. Ramdhan, Sh. Rajesh Yadav, Sh. Sunil, Sh. Mukesh and Sh. Rajesh** for their assistance in all phases of laboratory work.*

*I would like to thank all the staff members of academic section, Banasthali University, **Vimlesh Tanvar Ma'am** and **Lalit Sir** for their kind co-operation.*

*My sincere thanks are due to **Dr. Jameel Ahmad** Librarian of Banasthali University for providing the library facilities of the university.*

*None would ever thrive in life without the blessings of one's parents and the elders in the family. I bow my head with great respect before my beloved father **Mr. Naseem Ahmad Hashmi** and mother **Mrs. Zarina Naseem**, who made what I am today. They are always with me in my dreams and actions. My noble hearted and compassionate parents laid the solid foundations of my educational career and always cherished to see me, reach to newer height of excellence. Their life and teachings have taught me that excellence is a continuous journey and has no destination. I owe all this to their angelic grace. I hope they will be very happy to see that the dreams which they had nurtured and developmental inputs which they had provided have started taking the desired shape, infact I am short of words for their contributions in shaping my life as they are the real architech of my life.*

*I wish to covey my humble feelings of respect to my father in law **Mr. Jameel Ahmad Alvi** and mother in law **Mrs. Kaiser Jameel** for their affection, care, inspiration, and constant encouragement, which I obtained from them to pursue higher studies.*

*No words would be befitting enough to express my deep sense of admiration and my love to my younger brothers **Danish** and **Javed** who deserves to be remembered for their loving affections and encouragement during the work.*

*I find words inadequate to express my feelings for the lovable support which I received from my sweet sister **Zeenat** and sister in laws **Shahin** and **Shagufta**. Their love and ceaseless encouragement in this work have made them inalienable companions of this voyage of mine.*

*Words are insufficient to pay a very sincere thanks to **Dr. Parvez Ahmad Alvi** (my husband) for providing me unforgettable support in this work. I owe my deepest gratitude towards my better half for his eternal support and understanding of my goals and aspirations. His infallible love and support has always been my strength. His patience and sacrifice will remain my inspiration throughout my life. Without his help, I would not have been able to complete much of what I have done and become who I am. It would be ungrateful on my part if I thank him in these few words.*

"You're....My Friend, my companion, through good times and bad times, my friend, my buddy, through happy and sad, beside me you stand, beside me you walk, you're there to listen, you're there to talk, with happiness, with smiles, with pain and tears, I know you'll be there throughout the years"

*I am very thankful to my loving son **Faiz** for giving me happiness, though he is very young but he always try to make me cheerful which gave me a lot of freshness and energy to pursue my research work more vigorously*

I take this opportunity to express my heartiest thanks to my friends, all research scholars of chemistry and pharmaceutical chemistry for their co-operation in this work.

I wish to convey my humble feeling of respect to all my family members for their encouragement and inspiration.

Finally I would like to thank those who have helped me directly or indirectly for the success of this work.

Banasthali Vidyapith

(S. Zeba Hashmi)

Date: