

ACKNOWLEDGEMENT

The task of acknowledging the incalculable debt of appreciation, which is owned to many, is a very pleasing facet of thesis writing. It gives me immense pleasure in thanking those who were associated with me in completion of this work.

First my greatest regards to the Almighty for bestowing upon me the courage to face the complexities of life and complete this present work successfully.

At this ecstatic time of presenting my thesis, I find myself unable to elucidate in words my genial feelings of indebtedness and unfeigned gratefulness to my esteemed teacher and supervisor Prof. C.S. Pundir, Deptt. of Biochemistry, M.D. University, Rohtak, I express deep sense of respect and obligation to Prof. C.S. Pundir, for being my mentor and inspiration throughout my PhD studies; I am indebted to him for the responsibilities taken as my research guide. I have to share his efficacious company, not to speak of sharing his creativeness and omniscience besides his characteristic hospitality. With his sagacious advices, understanding, patience, enthusiasm, responsibility, vivid discussions, insight, sensibility, observation, rigor, and above all with his friendly nature, he helped me to complete this thesis work in the form that it is now. I am proud of having him as my guide. I shall consider it a privilege to have worked with him. No word can accomplish for the guidance, help and advices from my co-supervisor Dr. Ashok Kumar, Scientist 'F', (Molecular Biosensor Lab) Institute of Genomics and Integrative Biology (IGIB), New Delhi. His guidance and kind support is always remembrance to me. He was a source of inspiration for me throughout my research. I extend my sincere gratitude for his invaluable guidance along with providing me all supports and facilities in his lab.

I render my sincere thanks to Head, Deptt. of Biochemistry, for his corporation and providing me the necessary facilities & basic infrastructure for my research work in the department. I sincerely thank to all faculty members, Deptt. of Biochemistry specially Dr. Sandeep Singh & Dr. Vijay Kumar for their valuable suggestions, kind cooperation, helping me in collection of resourceful literature & research papers in relation to of my research work at different stages. I am also thankful to all non-teaching staff of this Deptt. for their cooperation during this work, I am thankful to Head, Deptt. of Biochemistry, PGIMS, Rohtak, for providing me serum and urine samples of healthy & diseased persons. I wish to express my sincere thanks to Dr. Minakshi, Dr. Darshna, Dr. K.K. Sharma, Faculty of Life Sciences, for their continuous guidance & unconditional help throughout this study.

It is also a matter of delight for me to convey my special thanks to my Seniors Dr. Tulika, Dr. Jagriti & Dr. Rachna for their help and cooperation in completion of my thesis. Words fail me to express my appreciation to my sweet friends cum labmates Roma, Suman Mam, Bhawna for their support and generous care. All of them were always beside me during the happy and hard moments to push me and motivate me. Interdependence is certainly more valuable than independence. I can not forget kind co-operation of my rest labmates cum friends Sheetal & Nidhi, thank you both of you for fun, valuable suggestions, immense support and help through the present research work. Always smiling & cheerful Nidhi Kundu's helping hand & respect helped me to relieve from loads of work.

Ashwani and Roshan, you have been with me for longest time, not only were you always there for me since I joined the lab (research) but also you have been great friends whom I can rely more. Thank you for being so nice to me. Thanks doesn't seem sufficient but it is said with appreciation and respect to both of you for your support, encouragement, care, understanding and precious friendship. It is my pleasure to acknowledge the helping hand and lively company of Dr. Vipin, Dr. Jaibir, Manish, Arvind, Sandeep, Kapil, Munesh, Ajay, Aman, Sunil, Alpa, Pratibha, Manila, Poonam, Jyoti, Preeti, Richa, Meenu and rest, my heartiest thanks to all of them. I extend my thanks to Sandeep K Das (IGIB, New Delhi) and Anamika (IIT, New Delhi) for their support, valuable suggestions & helping me in collection of research papers in relation to of my research work at different stages.

My special words of thanks I have reserved for Mrs. Sneh Lata Pundir Mam for her love and kind support. She will always be an inspiration to me.

I am forever thankful and in debt to my mother, father, sisters (Sapna & Jyoti) and Jija Ji Mr. Anoop, who have stood beside me in mind, body and spirit as I took on the challenges and obstacles of this research. The encouragement, helpfulness and support as helped me not only to overcome but also to preserve and excel. The care of my mother and incisive observances of my father could compensate all the restlessness during this thesis work. I would also like to thank my cutest and sweetest niece Ishita (Ishu) for bringing joy during periods of stress. It is my pleasure to acknowledge the love, care and affection from my grandparents (nani & nana), uncles, aunties & cousins, thank you all for your support in the completion of this degree.

Finally I acknowledge all the people, mentioned or not mentioned, who have been giving me supports, help and encouragements.

(Sandeep Yadav)