Doing research and writing the thesis has been both an amazing adventure and great challenge, but none of this would have been possible without the help of many people. This thesis is the culmination of a number of years effort and there are many people whom, I wish to thank for their contribution in either a practical or intellectual capacity.

First and foremost, I sincerely thank my research supervisor, Professor K. J. Rajendra Prasad, Department of Chemistry, Bharathiar University, Coimbatore, for having given me an opportunity to work in this topic of more interest in chemistry. I have been in his research group since 1999, when I started my Ph.D programme. During these years, I have known him as an advisor with encouragements and unquenchable curiosity in research, which consistently kept me going advance towards this stage. His enthusiasm and integral view on research and his mission for providing high quality work had a valuable impact on the final form and quality of this thesis.

I feel much pleasure to thank Professor K. Natarajan, Head of the Department of Chemistry, Bharathiar University, Coimbatore, for his kind help and encouragements during my research programme. He offered timely and valuable remarks whenever is needed.

I wish to thank Dr. S. P. Rajendran, Dr. S. Govindarajan and Dr. P. S. Mohan, faculty members, Department of Chemistry, Bharathiar University, Coimbatore, for their support and suggestions during the course of this study.

Also, I like to record my acknowledgement to Dr. S. Paulsamy, Reader, Department of Botany, Kongunadu Arts and Science College, Coimbatore, who gave me scientific material and support for doing antifungal and antibacterial assay of the compounds. Furthermore, I express my gratitude to Dr. M. Balaji, Genetic Division, KG hospitals, Coimbatore, for his help to perform DNA genotoxicity experiment.

In recognition of the help and assistance provided in numerous ways from the initial stage to the final stage of this work, I specially thank my fellow researcher Mr. I. Antony Danish.

Sangeetha V
I thank my seniors Dr. K. Shanmuga sundaram, Dr. R. Balamurali, Dr. C. Kavitha, Mrs. T. Vandana and juniors Mr. M. Manoj and Mr A. Ebeneser Martin, Mr. M. Sridharan and Miss. R. Praveena

I wish to acknowledge my friends Miss. K. Velumani, Miss. S. V. Renuka devi, Miss. Mary Sajini Devadas, Mrs. V. G. Gnana Soundari, Miss. D. Anitha, Mr. N. Kamala kannan, Mr. M. Mahesh, Miss. A. Mythili, Mr. T. Suresh, Mrs. V. Nithaya devi, Mr. N. Venkatesh Kumar and Mrs. S. Sharmila for their pleasant company and have been somehow beneficial for me.

I wish to thank Mr. N Sampath kumar, Mr. R. Nanda kumar, Dr. K. Saravanan, Dr. T. Prem kumar, Dr. R. Karvembu, Dr. C. Jayabalakrishnan, Mr. R. Prabakaran, Mr. T. Danabal and Miss. D. Suganya, Research Scholars, Department of Chemistry, Bharathiar University for their pleasant association during the course of my research programme.

The chain of my gratitude would be definitely incomplete, if I do not thank Mrs. M. V. Kaveri, Mrs. R. Shanthi, Mr. S. Ganesan, Mr. K. Kandavadivel and Mr. P. Arokiaraj for their technical and administrative assistance.

It is my privilege to thanks Mr. C. Baskar, Mr. Arvind, Miss. M.A. Deepa and Mrs. M. Ramya, Research Scholar, Department of Botany, Bharathiar University, Coimbatore for the help rendered by him.

I gratefully acknowledge the authorities of Bharathiar University, for providing lab facilities.

It is my duty to thank, Sophisticated Instruments Facility, Indian Institute of Science, Bangalore; Regional Sophisticated Instrumentation Centre, Central Drug Research Institute, Lucknow; Regional Sophisticated Instrumentation Centre, Indian Institute of Chemical Technology, Hyderabad; JSS College of Pharmacy, Udhagamandalam and R & D section, SPIC science and research foundation, Chennai, for their generous help and support to get the spectral and analytical data of the compounds.

Sangeetha V
As a significant part of this section on acknowledgement, I like to thank many researchers for their remarkable help by way of either generous supply of reprints whenever I requested or making contributions in scientific journals, which I referred to write the thesis.

Last but most important, I express my gratefulness, appreciation and gratitude to my parents and younger sibling for their unconditional love, support, understanding and encouragement throughout the entirety of my education without them my research and thesis would not have materialized. I hope that they can take as much pleasure from this finished work as I do.

V. SANGEETHA