ACKNOWLEDGEMENT

First of all, I am grateful to feel the Almighty and My father, Mr N. Kandhasamy for giving me an opportunity to do research work with good health and for His grace upon me.

This is by far the most important part of my thesis. Synthetic chemists often define their achievements in terms of the number of diverse molecules and/or the number of novel synthetic route they have developed. Yet, I realize that my greatest achievements have been the professional and personal relationships I have developed that have gotten me to this stage in life. So it is with tremendous gratitude that I write these acknowledgements to show my appreciation to some of the people who have helped me throughout the years.

I must record the most important people in my life, my mother, Mrs K. Radha, is the backbone of our family. My brother, Mr N. K. Srinivasan, is my biggest pillar of support and my sisters, Mrs K. Anbagavalli, Mrs K. Vijayalakshmi and Mrs K. Kavitha. I never reach this goal without their affection, patience, encouragement and cooperation.

I humbly express my gratitude and appreciation to Mr G. Sivagananam, Principal, Nandanan Arts College, Chennai, Mr T. Thillainayagam, Lecturer, and Mrs S. Kalaimani, Lecturer, Periyar Arts College, Cuddalore, for their enquiries, constant motivation from my college days. I would not have the strength to stay in chemist without their support.

It is really difficult to express gratitude and feeling in words to my research supervisor, Dr G. Vasuki, Associate Professor, Department of Chemistry, Pondicherry Univeristy, Puducherry. How can I thank a person who has done everything in her power to make sure that I succeed in life. There is no doubt in my mind that I will be a student of her group for the remainder of my life. As an advisor, she has always encouraged me to explore my ideas, and she has always supervised me in the right direction.

I take immense pleasure in expressing my deep sense of gratitude and heartfelt thanks to Dr R. Venkatesan, Associate professor, Department of Chemistry, Pondicherry University, Puducherry. He has an amazing ability to think beyond the traditional boundaries of our field and he only ignited me the insatiable passion of pursuing scientific knowledge in multidimension.

I owe to my sincere thanks to my doctoral committee members Prof H. Surya Prakash Rao, Dean, SOPCAS and Dr K. Srikumar, Associate professor, Department of Biochemistry and Molecular Biology, Pondicherry University for monitoring my research, providing crucial criticism and useful suggestions during my course of research.

I take this moment to shower my words of gratitude to all our department faculty members, Prof P. Sambasiva Rao, HOD, Prof Bidhu Bhusan Das, Prof K. Anbalagan, Dr Bala Manimaran, Dr M. M. Balakrishnarajan, Dr N. Dastagiri Reddy, Dr C. R. Ramanathan and Dr Binoy Krishna Saha who always supported me whenever i was need of their help. I thank
Authorities of Pondicherry University for providing me the necessary facilities to carry out research work.

I would like to acknowledge DST for project SRF, CSIR for awarding me CSIR-SRF, New Delhi, and Pondicherry University for providing me the financial assistance to carry out my research work.

It would not have been possible for me to achieve this stage, without the encouragement and motivation of my friends, Dr P. Suresh, Mr M. Logesh, Mr S. Selvakumar, Mr G. Manivannan, Mr R. Muralikrishnan, Mr T. Krishnaraj, Dr P. Anbarasan and Mr K. Santha-moorthy, for whom I am deeply indebted.

I have no words to express my appreciation to Mrs A. Vanitha and Mr B. Rajarathinam for their timely and unlimited help to reach my research at this level. It gives great pleasure to thank my colleague Mr S. Sabarinathan, Junior Mr R. Jayarajan, M. Phil scholars and M.Sc project students for their kind cooperation during my research.

I would like to express my graditute to Prof S. Jayachandran, HOD, Department of Biotechnology, Pondicherry University and his Scholar Ms Moushumi Priya for testing the anti-cancer activity of my research samples. I wish to thank to our collaborators Dr D. Sriram, Pharmacy group, BITS, Hyderabad campus, Dr R. Krishna and his students R. Rahul and M. Kannan for their valuable analysis of my sample towards in-vitro and in-silico biological activities.

I am great pleasure to thank our department seniors Dr K. Velavan, Dr S. Deepa, Dr K. Geetha, Dr K. Natarajan, Dr E. Poonguzhali, Dr K. Vasantham, Dr S. Sivakumar for their valuable advice and criticism.

I thank all research scholars from my department for being available at the time of need particularly My senior Mr S. Karthikeyan, Mr N. M. Rejendran, Mr P. Ratheeskumar, Mr R. Venkataramaiah, Mr T. Venkataswamy, Mr S. Ramesh, Mr S. Boobalan, Mr R. Nagaraj Prakash, Mr B. Bakyaraj, Mr E. Ganamani, Mr M. Karthikeyan, Mr K. Palanisamy, Mr K. Selva Kumar (late), Mrs K. Maheswari, Mr C. Guruviah, Mr J. Selva Kumar, Mr K. Parthiban, Mr K. Bhakthavachalam, Mr A.S. Ganeshraja, Ms P. Sathiya, Ms Maharaja Mahalakshmi, Mr B. Suman, Mr S. Mangalraj, Mr K. Babu, Mr M. Manjunathan, Mr A. Parthiban, Mr S. Maratheeswaran, Mr R. Rajesh and Mr M. Kamalraj.

I show my warm thanks to our hostel seniors Mr S.Vaithianthan, Mr E. Sanjeevi, Dr S. Vivekanandhan, Dr C. R. Mariappan, Dr P. Saravannan and Dr N. Ayyadurai for their support during my research. I express my heartfelt thanks to our hostel friends Mr B. Kalithasan, Mr N. Nallamuthu, Mr R. Vasantha Jayakantha Raja, R. Vinoth Rathan, Mr R. Murali and Mr I. Prakash.
I wish to render my thanks to the Chemistry Office Staff members, Mr. G. Gugan, Ms. R. Nirmala Devi, Mr. Senthil, Mr. M. Perumal, Mr. V. Shanmugam, Mr. A. Rajendiran, Mr. L. Ejoumale and other non teaching staff for their help during my research work in the department.

Furthermore, I am deeply indebted to CIF staff members, especially Mr. S. Ramasamy, Mr. Gopalakrishnan, Ms. R. Jeyanthi, Ms. S. Eliza Fathima, R. Elumalai, Mr. S. Chinnadurai and S. Prabakaran for their technical assistance.

I am grateful to SAIF, IIT-Madras, SIF, IISc Bangalore for allowing me to utilize the spectral facility to support my research work.

I would like to accord my thanks to my advisor’s family members Mr Ganapathi, Mrs Kalyani Mr G. Swaminathan and Ms S. Abirami for their involvement, encouragement, lovable caring and timely cooperation.

I must express my appreciation to Dr G. Kumaravel, Biogen, USA for his valuable comments and intellectual help.

It is great pleasure to remember our family kids A. A. Aruljothi, A. V. Arirajan, M. K. Aravinthkumar, S. D. Aruvasan, A. A. Aruldevi, S. D. Anbuvasan and A. V. Shamugapriya for their ever smiling face and they made every moment happiest whenever I went to home. I would like heartfelt thank to my Brother in laws Mr K. Arulnathan, Mr R. Anbazhagan, and Mr V. Moorthy and my sister in law Mrs R. Dhanalakshmi for their encouragement and cooperation.

Finally, I would like to thank everybody who was important to the successful realization of this thesis, as well as expressing my apology that I could not mention personally one by one.