ACKNOWLEDGEMENT

First of all I am Thankful to the Almighty who in every moment of my life always with me and always blessed me beyond my imaginations and helped me in every difficult time.

It is my privilege to express my deep sense of gratitude to my respected research guide, Dr. R. A. Nazeer, Ph.D., Assistant Professor, Department of Biotechnology, School of Bioengineering, SRM University for his constant support, encouragement and providing me enough independence to decide the things throughout the study.

My profound gratitude to Dr. T. R. Pachamuthu, Chancellor, Prof. P. Satyanarayanan, Vice Chancellor, Dr. T. P. Ganesan, Pro- Vice Chancellor, Dr. Murgesan Ponnavaiko, Provost, Dr. C. Muthamizhchelvan, Director, Faculty of Engineering and Technology, Dr. S. V. Kasmir Raja, Dean, Research, SRM University, for permitting me to undertake the research program.

I am grateful to Dr. K. Ramaswamy Dean, School of Bioengineering for giving me an opportunity to work in research area and for experienced guidance into the scientific way of thinking.

I express my sincere thanks to Dr. D. Velmurugan, Professor and Director, Department of Crystallography, and Dr. P. Ramasamy, former Vice Chancellor, Head, Department of Biotechnology, University of Madras for being my Doctoral committee members and for their suggestions and timely support.
I extend thanks to Dr. N. Thirunavukkarasu, Head-in-charge, Department of Marine Studies and Coastal Resource Management, MCC, Chennai, for his valuable help to identify the fish species.

I want to acknowledge Mr. R. Jaiganesh, Assistant Professor, Department of Biotechnology for his constant help and encouragement throughout this research time.

I would like to extend my heartful gratitude towards my colleague and friend Mr. N. S. Sampath Kumar, Research Scholar for being always there for me during hard times and encouraging me at every moment.

I also express my thanks to my colleagues R. Ranjith and Borve Daniel Artudo Kharsyntiew for their support, timely help, idea and suggestion.

I am thankful to Mr. S. Iyappan, Assistant Professor, Department of Genetic Engineering for teaching me basic concepts of purification of proteins and giving me hands on training for learning FPLC.

I would like to acknowledge Mr. C. Muthukumaran, Assistant Professor, Department of Biotechnology, for teaching me statistics related software.

I render my thanks to Dr. Japyesan Subramanian, CLRI, Adyar for helping me in completing all ESR related experiments in his esteemed laboratory.

I am especially thankful to Dr. Khaleefathullah Sheriff and Mr. Feroze Ahamed, Kings Institute, Guindy, helped to do cytotoxicity and antiviral tests presented in the thesis.

I am thankful to Mr. K. Manikandan, School of Pharmacy, SRM University for doing FT-IR related studies in his department.
I would like to acknowledge all Professors, Assistant Professors and Supporting Staffs of School of Bioengineering, SRM University for their moral support.

I would like to acknowledge all my Fellow Scholars, School of Bioengineering for their encouragement and ethical support.

I cordially thank my B. Tech and M. Tech students for their everlasting love and constant support.

Deep from our inner soul I would like to express my internal gratitude to my beloved parents and my loving brothers, who supported me and gave mental strength to make this doctoral degree a success.

(SHABEENA YOUSUF NAQASH)