

## ACKNOWLEDGEMENTS

*Thanking and adoring the almighty for his goodness and grace.*

*Chiefly, I would like to express my heartfelt gratitude to supervisor, Dr. C.K. Krishnan Nair, who encouraged and motivated me to pursue this research topic. Dr. C.K.K. Nair patiently read my texts, asked inspiring questions and assisted me with his great skills in structuring research articles. I truly enjoyed working in a research environment that stimulates original thinking and initiative which he created. He provided the materials for the work by either purchasing or getting from his collaborators or colleagues and gave critical advice and suggestions. It has been a greatly enriching experience to me to work under his authoritative guidance. It was only because of his keen interest and continuous supervision that gave my work this extent form.*

*I take this opportunity to sincerely acknowledge the University Grants Commission (UGC), Government of India, for providing financial assistance in the form of Senior Research Fellowship which strengthened me to perform my research work comfortably.*

*I wish to sincerely thank Fr. Pradeep Vazhatharamalayil, Principal, Mar Athanasios College for Advanced Studies Tiruvalla for the constant support and inspiration provided throughout my doctoral programme. I also sincerely thank Fr. Dr. Abraham Mulamoottil, former CEO of Pushpagiri Institute of Medical Sciences and Research Centre and Founder Principal, MACFAST, Tiruvalla for the support and encouragement. Particular thanks must also be recorded to Rev. Dr. Shaji Mathews Vazhayil, CEO; and Rev. Dr. Mathew Mazhavancheril, Director of Academics, Pushpagiri Institute of Medical Sciences and Research Centre, Tiruvalla for providing all the facilities for the successful completion of this project.*

*I would like to express my deepest sense of gratitude towards Dr. Anand Manoharan, Head of Research and Developments, Pushpagiri Institute of Medical Sciences and Research Centre, Tiruvalla, who inspired and encouraged me with his massive words and support. He granted me various conveniences without which it would not have been possible to work.*

*Most of the results described in this thesis would not have been acquired without a close collaboration with other faculty members. I gratefully express my sincere thanks to Dr. M.O. Annamma, Head of Department of Pathology, Pushpagiri Institute of Medical Sciences and Research Centre, Tiruvalla for the valuable evaluation and comments on histopathology slides; Dr. Nandakumar Kalarikkal and Dr. Sabu Thomas for the help provided for FTIR and TEM analysis of nanocomplexes; Dr. Jayasree, Biophotonics Lab, Sree Chithira Thirunal Institute of Medical Science and Technology, Thiruvananthapuram for tumor animal imaging; Dr. Jacob Varkey, Rubber Research Institute, Kottayam for the nanosize analysis of nanocomplexes; and Prof. K. V. Rao and K M Sreekanth, Department of Materials Science and Engineering, Royal Institute of Technology Stockholm, Sweden for providing the XRD data on the nanocomplexes.*

*I do hereby acknowledge all faculty members of Pushpagiri Research Centre and Macfast - Dr. Yogesh Dalvi, Dr. Maneesh Mailankot, Dr. Sara Chandi, Dr. Shilpa Joy and Mr. Biju Dharmapalan – as they have been very kind enough to extend their help at various phases of this research, whenever I approached them. I must also express my sincere thanks to Dr. Balarama Kaimal, Dr. G. Rajmohan and Dr. Jose Padikkala for their support at various phases of my study. My deep sense of gratitude to all faculty members of School of Biosciences, Mahatma Gandhi University (Kottayam) especially to Dr. J.G. Ray and Dr. Keerthi for their valuable suggestions and support, helped me to successfully complete PhD course work and pre-PhD presentation.*

*I am extremely indebted to Dr. K.M. Cherian, Dr. D.M. Vasudevan and Dr. K.G. Padmakumaran Nair for their helpful suggestions and comments during my progress report presentations. I record my sincere thanks to Atul PhilipVarghese, Jagan O.A. and Sincy George, Molecular Virology Section, PIMS and RC for their help during the Real Time-PCR analysis of the samples. I personally extend my sincere thanks to Mrs. Dhanya CR, Assistant professor, Government College, Thiruvananthapuram for her valuable suggestions and help.*

*I am grateful to my colleagues- Aditya Menon, Tiju Ckacko, Indu R, Lakshmi S- for their kind support and valuable suggestions throughout this study. I would also like to express gratitude to my friends - Lincy Lawrence, Robin Augustine, Indu M Nair, Edwin, Reshma CK, Sheila Kachchhap, Robin, Matcy, Teny, Soumya, Namitha Vijay, Praseetha, and course work classmates- for their support, interest and encouragement throughout the completion of this study. Special heartfelt thanks to my friend and colleague, Ruby Varghese for being with me throughout these years and helping out in all ways possible.*

*I am thankful to Mr. Thomas and Mrs. Susi, Pathology lab, PIMS and RC for their help in preparing histopathology slides. I am also grateful to Mrs. Mini Sodharan and Mrs. Saliamma, animal house assistants, PIMS and RC, for their help in the maintenance of animals.*

*This journey would not have been possible without the support of my family. I gratefully acknowledge my beloved parents, Sri. R Balakrishna Pillai and Smt. Sumangala Devi, and my elder sister Remya Rajesh for being my inspiration and motivations to always do my best in everything. My heartfelt thanks to my husband, Mahesh Murali, whose unconditional love, patience, and continual support for my academic endeavours, over the past few years, enabled me to complete this thesis successfully. I also express my gratitude to my father-in-law (late) Sri. Muraleedharan Pillai, Mother-in-law Smt. Padmalatha, and brother-in-laws Midhun Murali and Rajesh V Nair for their blessings and motivations.*

*It is my pleasure to express heartfelt thanks to all those who contributed to the successful completion of the study.*

*Thank You*

*Sreeja S*