

## ACKNOWLEDGEMENTS

I gratefully acknowledge the kind assistance I have received from various persons during the course of my research. I am particularly grateful to my research guide, **Dr. Krishnakumar N Menon**, Associate Professor, Amrita centre for Nanosciences and Molecular Medicine, Amrita Vishwa Vidyapeetham for giving me an opportunity to join his research lab. Since the day I began my work, he had accompanied me in my research with his unfailing support, challenging guidance and constructive criticism. I was highly inspired by his deep scientific knowledge and sincere commitment to scientific research.

I sincerely express my heartfelt gratitude to **Dr. Shantikumar V Nair**, distinguished Director, Amrita Centre for Nanosciences and Molecular Medicine & Dean of Research, Amrita Vishwa Vidyapeetham. He provided me with an opportunity to conduct my PhD research in the field of molecular medicine with best available research facilities of the international standards. His insightful advices and logical thinking were of great inspiration to me.

I owe my gratitude to my co-guide, **Dr. Pavithran K**, Clinical Professor and HOD, Medical Oncology, AIMS, Kochi. His timely advices and suggestions have contributed a lot to the clinical aspects of the work. Here I must also thankfully remember **Dr. T S Ganesan** who was my co-guide for the first three years of my research.

I thankfully acknowledge **Dr. Lakshmi**, Assistant Professor and **Dr. Raja Biswas**, Associate Professor, Amrita centre for Nanosciences and Molecular Medicine for their great help and support. They granted their support especially in the areas of cloning, bacterial expression and purification of proteins.

I also thank other Doctoral Committee advisors, **Dr. Ullas Mony**, Assistant Professor, Amrita centre for Nanosciences and Molecular Medicine and **Dr. Kannan Vydhyathan**, Associate Professor, Biochemistry Department, AIMS, Kochi for their valuable suggestions and encouragements during the committee meetings. I take this opportunity to express my gratitude to all other faculty members of Amrita Centre for Nanosciences and Molecular medicine for their selfless support.

I delightedly acknowledge **Dr. Neeraj Sidharthan** and other doctors, nurses and technical assistants in the Medical Oncology department for their help in collecting clinical samples. I also remember the **Patients** who willingly gave the blood and CSF samples for research studies in the middle of their pain and distress.

I also take this opportunity to acknowledge the **Council of Scientific & Industrial Research (CSIR)**, Government of India, New Delhi, for providing financial assistance in the form of Junior and Senior Research Fellowship which buttressed me to perform my work without any financial anxieties. I acknowledge the support from **Indian Council of Medical Research (ICMR)** for funding the project.

I express my deep sense of gratitude to **Amrita Vishwa Vidyapeetham**, for providing substantial infrastructure for basic research in Molecular Medicine.

I am thankful to my **Friends**, my **Lab mates** and **Project students** for their support and help throughout these years. Nevertheless, my sincere token of thanks extends to the rest of my **Colleagues**, **Friends** and **Office staffs** who have immensely helped me personally and professionally. No one is forgotten although not mentioned.

I appreciate **Mr. Sajin P Ravi** and **Mr. Sarath**, for their technical support and **Mrs. Radha** and **Mrs. Saraswathi** for their lab assistance and support.

I remember the endless support, love and inspiration of my **Parents**, **Sister** and **Achacha**.

Above all, I bow before the **Almighty** who bestowed the grace upon me to accomplish this dream project. He strengthened me whenever I was weak, and I believed in his promises.

*Do not be afraid-I am with you!  
I am your God-let nothing terrify you!  
I will make you strong and help you;  
I will protect you and save you.*

*[Isaiah 41: 10]*