

ACKNOWLEDGEMENT

First of all I would like to bow to God as a Gesture of Gratitude for giving me strength throughout my research work.

With deep sense of gratitude and respect, I would like to extend my sincere thanks to my esteemed supervisor and favorite teacher Prof. Ambikanandan Misra for his invaluable guidance, continuous support and motivation towards quality work that has disseminated in me essence of morality, sincerity and hard work towards research. He has always been constant source of inspiration and persistent encouragement for achieving higher principles in professional as well as personal life. I can never forget lessons of life learned from him. I feel privileged to be associated with a person like him during my life.

I would like to express my sincere thanks to my co-guide Prof Rasheedunnisa Begum for unstinting support and guidance provided by her to understand intricacies of molecular genetics. I also thank her for providing me facility to carry out part of my research at her lab. She has been constant source of encouragement during my research work at her lab.

I would like to extend my heartfelt thanks to Prof A. T. Lauva, Dr. Minal Shastri, Dr. Paresh Thakkar and Dr. Jaya Pathak, Medical College Baroda, S.S.G. Hospital, for providing much needed suggestions for human ethics committee approval and allowing me to collect blood samples of hypothyroid patients at S.S.G. Hospital. My special words of thanks should go to Dr. Minal Shastri for her help in hypothyroid patient diagnosis and selection for inclusion in study.

I extend my special thanks to all patients and healthy blood sample donors for participating in research work. I also thank technical staff at blood collection center, S.S.G hospital for extending help in blood sample collection.

I express my sincere thanks to Prof. M. R. Yadav, Prof. Krutika Sawant, Prof. Sadhana Rajput, Late. Prof. Rajini Giridhar, Dr. Rajashree Mashroo, Dr. Pankaj Nagar, Dr. Hetal Thakkar, Hemal Madam, Mr. Navneet Prajapati, Dr. Prashant Murumkar, Mr. Bhavik Chauhan for their valuable suggestions and help whenever sought for. My sincere thanks are due to Rathod Sir, Co-ordinator, Sri G. H. Patel Pharmacy Building for his continuous support on easing the facility improvements. I would also like to thank Dr. Kirti Patel for her support for Animal studies starting from protocol preparation to getting the approval from the CPCSEA.

The UGC-BSR fellowship awarded to me to carryout research is highly acknowledged. I extend my thanks to UGC, New Delhi.

While writing this I am full of fond memories of my friends Rohan Lalani and Mala Singh who made this journey vibrant and easy. They have always helped me on everything whenever I needed them. I will always cherish crazy conversation and funny time that we shared.

I take pleasure in thanking my dear friends Priyanka Bhatt, Jitendra Amrutiya, Sushil Patil, Imran Vhora, Vivek Patel, Ashlesha Kadam, Tina Alex, Shoaib Mansuri, Vaidehi Chemburkar and Arpita Patel. I extend my sincere thanks to my senior researchers, Dr. Dipesh Baradia, Dr. Girish Kore, Dr. Chetan Yewale and Dr. Nirav Khatri for their help, support and advice. I also thank my departmental colleagues Mitali Patel, Veenu mundada, Rahul Dhande, Praveen Srivastava, Chintan Patel, Prachi Bhamre and Jagruti Desai.

I also thank my friends Priya and Mahesh for their support extended for performing FTIR spectroscopic analysis of cationic polymers.

This acknowledgement would be incomplete if I do not mention my students, Nilima Pandya, Jigar Vanza, Parva Jani and Disha Shah, through whom also I have learned a lot.

I extend my sincere thanks to Prof. Gregory J. Gores (Mayo clinic, Minnesota 55905) for providing me pEGFP-N1 as a kind gift. I also thank Dr. Maria Castro for sending me pAL119-mCTLA4-IGHG1 through addgene.

I extend my acknowledgement to Sun Pharma Advanced Research Center for providing support on Transmission Electron Microscopy and NMR spectrometry.

I am extremely thankful to Prof. Sarita Gupta, Co-ordinator, Dr. Vikram Sarabhai Science Center; M. S. University of Baroda for her support to perform confocal microscopy and FACS analysis.

I thank Dr. Senthil Natesan and my friend Dhruv Gosai, Genomic research centre, Faculty of science, The M. S. University of Baroda for providing HEK 293 cells for cell culture studies.

I acknowledge help provided by Prof. Smita Patel, Department of Pathology, Medical College Baroda, S.S.G. Hospital, for histopathology analysis.

I extend my sincere thanks to Dr. Satish Patel, Zydus Research Centre, Ahmedabad, for providing laboratory animals for animal studies.

I extend my sincere thanks to Vaishali mam for her timely support whenever required throughout my research work. I also extend my thanks to other office and laboratory staff, Pravin bhai, Heena madam, chandrakantbhai, Jagdishbhai, Naginbhai, Pramodbhai and chandrakant for their continuous help. I acknowledge timely help provided by Pragnesh Prajapati for maintenance of Lab equipments.

I owe deepest gratitude towards my better half for understanding my aspirations and goals. His infallible support, unconditional love and patience have always been my strength and will remain my inspiration throughout my life. Without his help this journey would not have been so easy. Words may fail to express my gratitude towards Kaushal.

My family deserves special mention for selfless support and motivation. I consider myself the luckiest to have such a caring and encouraging family, standing behind me with dedication and persistent confidence towards me. I cannot forget support extended by them during this time.

I express my heartfelt gratitude to the countless people who have helped and blessed me in numerous ways in completing this work.

Hinal N. Patel