

ACKNOWLEDGMENTS

“Roshni ki rah, to chaltein hain sabhi.....,
Rah roshan kar chalo, to koi baat hai.....”

-unknown

Interdependence is core of nature and certainly it is more valuable than the independence. A journey becomes more pleasant and cosy when we travel together. The results slotted in this thesis are the outcomes of my hard work. During this journey I have been accompanied and supported by many people. It's my pleasure to have the opportunity to express my gratitude to all of them who assisted me.

First of all I would like to acknowledge the Department of Biotechnology, Government of India for the PhD studentship [Award no. DBT-JRF/05-06/71/29.08.05] that enabled me to pursue my doctoral research at the Department of Biotechnology, University of North Bengal, Siliguri, W.B, INDIA, without which this work was not possible.

I would like to thank my supervisor, Ranadhir Chakraborty, Associate Professor & Head of the Department of Biotechnology, North Bengal University, who with his philosophy of mentoring, which gives the freedom to evolve, large knowledge, and enthusiasm for science and not least his great sense of humour has helped and inspired me to develop scientifically.

Thanks to the Vice chancellor, Registrar, Science dean, University of North Bengal, for granting me opportunity to carry out the research work in the said university; Prof. Asim Chakravorty, the visiting faculty, department of Biotechnology for his encouragement, and Prof. Ashis Kumar Nanda, department of Chemistry, University of North Bengal for providing help in some experiments.

Thanks to the faculty members (Dr. Dipanwita Saha and Dr. Shilpi Ghosh), department of Biotechnology, University of North Bengal for their active support to carry out research.

Thanks to Dr. Shriparna Mukherjee and Dr. Anirudra Gurung, former senior researcher, for their support and assistance.

Heartiest thanks to my colleagues of the “Omics Laboratory” Krishna Kant Yadav, Bipranch Kumar Tiwary, Amit Kumar Mandal, Dhananjay Kumar, Rakesh Kumar, Mrs. Suparna Bhowal, Prashanti Singh and Debjani Sarkar, and other laboratory's members: Kamal Krishna Singh, Gargee Dhar purkayastha, Seema Mandal, Anosuya Ghosh, Ramashish Kumar, Moushree Pal Roy, and Madhumita Poddar for sharing knowledge and doing discussions during frustrated times.

I would like to express my gratitude towards Manav Deb Adhikari, IIT Guwahati, India who provided me scanning electron micrograph of one novel strain, *Brevibacterium siliguriense*, and for mental support during my hard time of life.

I would also like to thank all the co-authors for intellectual collaboration, valuable contribution and suggestions:

From India: Dr. Pinak Chakrabarti and Soumynanda Chakraborti, department of Biochemistry, Bose Institute, Kolkata 700054; Prachi Joshi, National Physical Laboratory, New Delhi 110 012.

From Abroad: Ahmet Kati, Giresun University, Faculty of Arts and Sciences, Department of Biology, 28049, Giresun, Turkey. I gratefully appreciate the cooperation of Dr. İkbâl Ağah İnce, Wageningen University and Research Center, Laboratory of Virology, Radix Building 107, Droevendaalsesteeg 16708 PB Wageningen, Netherlands who helped me in some valuable practical work and in preparation of manuscript.

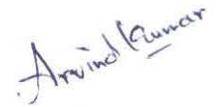
Thanks to the BCCM/LMG Bacterial collection, University of Ghent, Belgium for gifting the strain, *Brevibacterium epidermidis* LMG 21455^T.

I sincerely acknowledge to hosts of the website www.google.com, www.ncbi.nlm.nih and several other scientific websites mentioned at various places inside manuscript.

Special thanks to my friends Dr. Ratanesh Seth, Dr. Birendra Paswan, Dr. Rajiv Lochan Tiwary, Dr. Ashutosh Kumar, Shashi Kant Singh, Mohamad Yasir, Shikha Pundeer, especially Ashok Kumar Vishwakarma, Shushil Kumar, Jeenita Sharma, Serelyn Enojardo, and Abad Husain (Sr. Teacher) for being with me when nothing seemed to be going right.

Finally, I am indebted to my father (Mr. Banwari Lal, Ret. School teacher) for his non-stop back support and constant encouragement. There are no words for my mother (Mrs. Kamala Devi, Sr. CHB) who burns her life to enlighten me and my brothers. I am in front of you and with you, because! she was always behind me to catch, whenever I fall down. I extend the hand of special thanks to my brothers: Braham Kant Bharti, Surya Kant Bharti (Sr. Locopilot), Chandra Kant Bharti (Principal), and rest of the family members for their generous support during my nasty situation. The victory really becomes more pleasant when you hit the goal in very tough situations. Submitting this thesis is the best achievement of my life and I am glad that after all my dreams taken a beautiful shape.

Date: 26-12-2012



Arvind Kumar