

ACKNOWLEDGEMENT

I am indebted to my mother whose inspiration along with physical and mental support provided me the energy to cross the long twenty five years of my academic career.

I wish to express my deep sense of gratitude to all my family members for their encouragement and inspiration without which this dissertation would have not taken the present shape.

I express my heartfelt gratitude and indebtedness to my research guide Prof. Dipak Ray, Principal , Taki Government College (Former Head & Professor of Zoology, Post Graduate Department of Zoology, Darjeeling Government College, Darjeeling-734101, West Bengal, India) for suggesting the problem, constant guidance and valuable advice during the entire period of work.

I am ever grateful to Dr. J. C. Nag, Assistant Professor, Department of Anatomy, All India Institute of Medical Sciences, New Delhi, for his valuable suggestions and encouragement towards the fulfillment of this work.

I behold to Dr. S.K. Das for his friendly attitude in teaching me the molecular techniques and his constant guidance in the laboratory.

I am grateful to Dr. D.K. Sarkar, former Principal, Darjeeling Government College, for permitting me to use all the laboratory and library facilities of the college and true encouragement towards this work.

I wish to express my sincere thanks to all the staffs of Department of Electron Microscopy, All India Institute of Medical Sciences, New Delhi, for providing me Transmission Electron Microscopy facilities and technical advice for tissue processing and sample preparation.

I am also grateful to Dr. Srikanta Chakraborty of Central Instrumentation Center, University of Burdwan, West Bengal, for providing me the Scanning Electron Microscope facilities and technical advice.

I am thankful to Dr. S. Bandopadhyay, Indian Institute of Chemical Biology, Kolkata, for providing me the laboratory facilities for FACS studies along with his valuable technical advice.

I like to pay my gratitude to the Libarians of National Medical Library, New Delhi; Bose Institute, Kolkata; Indian Institute of Chemical Biology, Kolkata; Institute for Research in Reproduction, Mumbai and All India Institute of Medical Sciences, New Delhi.

My heartfelt thanks to my dadu (Sri. Tarapada Roy), dida (Smt. Malati Roy), baba (Sri Dharmadev

Chatterjee) and my dada (Dr. Biswanath Chatterjee) for their active cooperation and mental support.

My special regards to Miss Kakali Sarkar, my closest friend, for her encouragement, which has insisted me to join the research project, and her constant moral support and guidance towards the completion of the work.

I also wish to thanks Sri Sudipta Patra, Sri Saurabh Chakraborty, Dr. Diptiman Chandra, Sri Debasish Ghosh, Sri Rupak Chatterjee, Sri Sanjit Chatterjee, Sri Sudarsan Layak, Sri Ananda Mandal, Sri Gautam Chakraborty, Sri Probodh Mondal, Prof. J.K. Chattaraj, Dr. F.B.Mandal, Prof. S. Basak and Dr. Richard R.N. Bajpai, for their active support and cooperation, without which it would have been impossible for me to complete the project.

Chaudranath Chatterjee
03/12/03