

## **PREFACE**

I started my research work in 2008 which has been documented in this dissertation entitled “IMMUNOLOGICAL AND MOLECULAR INVESTIGATIONS OF CHILDHOOD ASTHMA IN THE SUB-HIMALAYAN REGION OF WEST BENGAL, INDIA” under the joint supervision of Prof. T. K. Chaudhuri, Department of Zoology, University of North Bengal and Prof. Mridula Chatterjee, Department of Pediatrics, North Bengal Medical College and Hospital, Sushrutnagr, Dist. Darjeeling.

Asthma is a common chronic disorder that is characterized by recurrent symptoms of wheeze, breathlessness, chest tightness, variable airflow limitation and chronic inflammation of the airways. Narrowing of the airway is primarily caused by inflammation, excess mucus production and contraction of smooth muscle surrounding the airways. Due to the chronic nature of asthma the lives of sufferers are affected in a multitude of ways including sleeplessness, daytime fatigue, reduced levels of activity and work and school absenteeism. This can result in life-long detrimental effects including adverse outcomes on early education in children, reduced fitness, weight gain and the inability to concentrate while at work.

The prevalence of asthma in children in this Sub-Himalayan region of West Bengal, India, seems to be high and various environmental triggers may be responsible for this. Therefore, the present case-control study was designed with the broad objectives of understanding the basic immunological and molecular aspects of asthma. The study was conducted in asthmatic and control children of age group 3 to 12 years. Asthma was diagnosed by the physician and the subjects were recruited in the study from the Department of Pediatrics, North Bengal Medical College & Hospital, Sushrutnagar, Siliguri. Blood samples were collected from the participants under appropriate conditions and brought to the Cellular Immunology Laboratory, Department of Zoology, University of North Bengal, where the further experiments were performed. The findings of the study are published in various research journals and are presented and discussed in details in the Results & Discussion part of this dissertation.