Preface

I started my research work in February 27, 2012 which has been documented in this dissertation entitled, "Immunopharmacological Evaluation of Leaf Extract of an Ethnomedicinal Herb, *Croton bonplandianus* Baill. (Euphorbiaceae)" under the supervision of Professor Tapas Kumar Chaudhuri, Cellular Immunology Laboratory, Department of Zoology, University of North Bengal.

Since the last few decades, with the increasing rate of publications in medical and pharmacological journals, it was quite apparent that evidence based pharmacognostic studies on complementary and herbal medicine were booming. Synergistic activities of known phytochemicals, plant extracts or novel bioactive leads were constantly being identified by biophysical screening of medicinal plants. Furthermore, traditionally known therapeutic uses of different medicinal plants were being established through *in vivo* trails.

At that juncture, I decided to evaluate certain immunopharmacological properties of *Croton bonplandianus*, is an ethnopharmacological plant. Various parts of *C. bonplandianus* are extensively used in the treatment of diverse ailments. Moreover, it is well known for its therapeutic efficacies in Indian and Chinese traditional medicinal systems.

Therefore, in the present study, 6 different bioactivities of *C. bonplandianus* leaf namely phytochemical estimation, antioxidant and free radical scavenging activity, immunomodulatory, anti-inflammatory, neuromodulatory and hepatoprotective activities were evaluated using *both in vivo* and *in vitro* techniques. In addition, detail phytochemical investigations were performed using various techniques like FTIR and GCMS analyses.

The findings of the study are published in various research journals and are presented and discussed in details in the Results and Discussion part of this dissertation.