Preface

Since ancient times, mushrooms are highly appreciated to human society not only for their flavour andtexture but also for therapeutic value which was explored in traditional medicines. To overcome the disadvantages of synthetic drugs and their gradual incompetence, growing attention has been focused on natural products in an attempt to search for novel effective agents. In this context, considering that mushrooms are important sources of chemically diverse secondary metabolites which possess a wide spectrum of biological activities, the present thesis entitled "**Study of Diversity and Antibacterial Potential of Mushroom in Gurguripal Ecoforest**" has been designed. The general introductory portion gives a brief idea about the diversity and ecological interactions of mushrooms along with their profound nutritional and bioactive potentials. The Review of literature section recapitulates the diversity of mushrooms in West Bengal and India, their proximate compositions as well asmedicinal properties. The chapter 1 deals with the Study of seasonal diversity, species richness, species abundance and ethnomedicinal utilisation of mushrooms in Gurguripal ecoforest. The chapter 2 represents the nutrient contents, phenolic composition, antioxidant capability, and fatty acid profile of mushrooms.In chapter 3, Study of antibacterial potential, characterisation and efficacy enhancement of mushroom extract were carried out. The chapter 4entails the *insilico* study on the actual bactericidal mechanism of *p*-coumaric acid, a principal compound in *Termitomyces heimii*. The next section highlighted the important summary and conclusion drawn from the thesis. The literature cited in the thesis has also been presented as references at the end.

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