

## LIST OF FIGURES

Figure No.	Name	Page No.
Fig 1.1	Location of the study area (Gurguripal ecoforest, Paschim Medinipur, West Bengal, India)	41
Fig 1.2 – A, B, C, D	Occurrence of wild mushrooms in Gurguripal ecoforest	43
Fig 1.3 – A, B, C, D	Collection of mushroom specimens during field survey in Gurguripal ecoforest	43
Fig 1.4	A, B, C - Harvesting, D - Cooking of wild edible mushrooms by local tribal people in Gurguripal	44
Fig 1.5	Selling of mushrooms in markets nearby Gurguripal (A- <i>Termitomyces heimii</i> , B- <i>Astraeus hygrometricus</i> , C- <i>Volvariella volvacea</i> , D- <i>Amanita bisporigera</i> )	44
Fig 1.6	Family wise distribution of mushroom in Gurguripal ecoforest	52
Fig 1.7	Distribution of mushrooms on different habitat in Gurguripal ecoforest	52
Fig 1.8	Mushroom species used by the tribal communities in Gurguripal	81
Fig 2.1	Antioxidant assay (IC <sub>50</sub> value in %) of methanolic fractions of <i>T. heimii</i> (A, B) and <i>V. volvacea</i> (C, D)	102
Fig 2.2 (A)	Chromatogram of GC-MS analysis of methanolic extracts of <i>T. heimii</i>	104
Fig 2.2 (B)	Chromatogram of GC-MS analysis of methanolic extracts of <i>V. volvacea</i>	105
Fig 2.3 (A)	Nutrient analysis of <i>T. heimii</i>	106
Fig 2.3 (B)	Nutrient analysis of <i>V. volvacea</i>	106
Fig 3.1	UV-Vis spectrum analysis of silver nanoparticles	119
Fig 3.2	FT-IR study of silver nanoparticles	119
Fig 3.3	HPLC analysis of <i>Termitomyces heimii</i> extract	121
Fig 3.4	LC-MS analysis of THP-I from <i>T. heimii</i>	123
Fig 3.5	<sup>1</sup> H-NMR spectrum and chemical shifts of THP-I from <i>T. heimii</i>	123
Fig 3.6 (A)	Cytotoxic effects of THP-I from <i>T. heimii</i> on Vero and HCT cell lines	126
Fig 3.6 (B)	HCT cells before treatment (A), cell death after treatment (B)	126
Fig 3.6 (C)	Vero cells before treatment (C), after treatment (D)	126
Fig 3.7	Antibacterial activity of acetone extracts against the selected bacteria	128
Fig 3.8	Antibacterial activity of ethanolic (A, B, C, D) and hot water (E, F) extracts against the selected bacteria	129

Fig 3.9	Antibacterial activity of methanolic extracts against the selected bacteria	130
Fig 3.10	Antibacterial activity of F <sub>11</sub> , AgNPs and THP-I against the selected bacteria	131
Fig 4.1	Microscopic observation of untreated and <i>p</i> -CA treated <i>S. aureus</i> and <i>E. coli</i> cells	140
Fig- 4.2	Ramachandran plot analysis of some good quality structures [Residues in most favoured regions (A, B, L)% + Residues in additional allowed regions (a, b, l, p)%]	159
Fig- 4.3	Some predicted membrane protein structures of <i>S. aureus</i> and their docking with <i>p</i> -CA	164
Fig- 4.4	Phylogenetic tree of all the trans-membrane proteins from <i>S. aureus</i> and <i>E. coli</i> . The matched sequences were presented elaborately in the figure (Red=match sequences between <i>S. aureus</i> and <i>E. coli</i> ; Blue = only from <i>S. aureus</i> ; Green = only from <i>E. coli</i> )	167
Fig- 4.5	Some structurally similar protein present in <i>S. aureus</i> and <i>E. coli</i>	171
Fig- 4.6	Molecular docking results of <i>p</i> -CA with different proteins showing high Atomic Contact Energy (ACE) value	172
Fig- 4.7	Docking site (A) and rigid bond pattern (B) of <i>p</i> -CA within CDP-diacylglycerol-glycerol-3-phosphate 3-phosphatidyltransferase of <i>S. aureus</i>	172
Fig- 4.8	Docking site (A) and rigid bond pattern (B) of <i>p</i> -CA within CDP-diacylglycerol-glycerol-3-phosphate 3-phosphatidyltransferase of <i>E. coli</i>	173