

## List of Figures

### Chapter-1. Introduction

Fig 1: Arsenic contaminated region pointed in the world .....05

### Chapter-2. Review of literature

Fig 1: The arsenic cycle in soil – water-plant interfaces .....08

Fig. 2: Diagram of arsenic contamination in both human being and livestock.....12

### Chapter-5. Results

Fig.1. Malondialdehyde (MDA), non protein thiol (NPSH) and DNA fragmentation in *Bellamyia bengalensis* tissue after arsenite exposure in live organism .....47

Fig.2. MDA and NPSH level in hepatic tissue and uric acid in serum sample in rat model.....48

Fig.3. Catalase (CAT), Xanthin oxidase (XO) and lactoperoxidase (LPO) in hepatic tissue in rat model..... 48

Fig.4. Serum protein, Serum glutamic pyruvic transaminase (SGPT), alkaline phosphatase (ALP). .....49

Fig.5. Kidney function marker urea and general tissue degeneration marker like Lactate dehydrogenase (LDH) in rat serum.....49

Fig.6. Hepatic cytosolic super oxidase dismutase (SOD) activity in gel zymography in-vivo and in-vitro experiment.....51

Fig.7. DNA Fragmentation and densitometry analysis in rat liver.....52

Fig.8. Single- cell DNA damage (COMET) in rat liver.....53

Fig.9. Hepatic tissue architecture in rat by H&E Staining.....54

Fig.10. Qualitative and Quantitative measurement of Mitochondrial membrane potential in rat liver.....	56
Fig.11. Intestinal cytosolic SOD activity in gel zymography.....	57
Fig.12. CAT and Conjugated di-ene (CD) in content in intestinal epithelial tissue homogenates in different group of rat model.....	58
Fig.13. MDA and NPSH level in intestinal epithelial tissue homogenates in different group of rat model.....	58
Fig.14. Inflammatory cytokines TNF- $\alpha$ and NO level in experimental rat serum.....	58
Fig.15. Liver and renal function markers level in rat serum.....	59
Fig.16. DNA fragmentation in of intestinal epithelial cells in rat.....	60
Fig.17. Comet assay: Breakage shown in single cell in rat intestinal epithelial cell .....	61
Fig.18. The intestinal histoarchitecture in rat by H&E Staining and pas staining.....	62
Fig.19. In –vitro: graphical representation MDA and NPSH level.....	64
Fig.20. Catalase and SOD activity in Gel-zymography in rat liver slice.....	65
Fig.21. Catalase and SOD (Cu-Zn SOD or SOD1) activity by sodium arsenit with free phosphorus and cysteine in rat liver slice.....	66
Fig. In- vitro comet assay studies in liver slice.....	67
<b>Chapter 6: Discussion</b>	
Fig.1. Mechanism of arsenic toxicity and cell death.....	73