CHAPTER 3

AIMS AND OBJECTIVES

1. Finding suitable bacterial short test systems sensitive enough for response to commercially important metal compounds chosen for present studies.

2. Subjecting bacterial systems chosen namely Rec assay and SOS Chromotest, to various molar concentrations of metal compounds. (Mercuric chloride, Mercurous nitrate, Chromium oxide, Chrome alum, Chromium chloride (E. merck) Potassium dichromate, Lead chromate, Lead dioxide, Lead nitrate and Lead acetate (BDH), Lithium carbonate, Lithium citrate, Lithium acetate and Lithium chloride from SISCO).

3. Observing the dose related relationship with the response obtained for all the metal compounds.

4. Relevancy and use of rat liver metabolizing enzymes (S9) to mimic mammalian systems in metabolically activating and deactivating the compounds.

5. Subjecting the highest mutagenic compound decided from the results of the bacterial test systems to the mammalian system in vivo.

6. Acute studies on mammalian system in terms of accumulation, peroxidation and effects on genome performing lipid peroxidation, DNA adduct and alkaline unwinding at regular intervals within 24 hours.