P R E F A C E

The laboratory of animal physiology, Department of Zoology, Shivaji University, KOLHAPUR has been engaged in extensive work on Uranyl nitrate toxicology and Uranyl nitrate induced acute/chronic renal failure. So far number of research articles have been published in the international/national journals devoted to this area and have been presented in international/national conferences, mainly the behavioural and physical response to Uranyl nitrate, lipid content of the blood of UN administrated animals, behaviour of lipolytic enzymes in kidney, liver and brain in response to uranyl nitrate administration; pathophysiological response of kidney, liver and brain; hematological alterations during UN induced ARF; protective efficiency of dithiothreitol in experimental acute renal failure, and its effects on hematological profile in UN induced acute toxicity; UN induced corpuscular derangement as an early indication of renal dysfunction anemia of UN induced chronic renal failure etc.

Although the tolerance of UN and lipid content of blood were studied the plasma protein part was untouched. The study of UN induced ARF is essential since it poses a serious risk as industrial health hazard. The main transporting of toxic matter is essential aspect of the study of effects of metal toxicants. In this thesis the study on the plasma proteins, the main carriers is carried out and the alterations in them are studied.

Thus in the present investigation an effort has been made to study the fractions of plasma proteins.

This thesis is divided into four chapters. The first chapter gives a brief review of literature on plasma proteins, heavy metal toxicity and Uranyl nitrate intoxication. It also gives an outline of the present investigation along with the reasons that led to take up this work. The second chapter explains in detail the materials and methods used during the experiments. The third chapter deals with the observations and results obtained after the estimation of total plasma proteins by Lowry's method. The SDS-PAGE of plasma proteins was also carried out and the details of molecular weights and concentrations and alterations are included in the third chapter.

The fourth chapter mainly concerns with the general discussion of observed facts with reference to the significant changes observed in the plasma proteins.

The present investigation opens several avenues for the future research in the field of metal toxicity and alterations in hepatic, renal and blood parameters.