CHAPTER 6

CONCLUSION

In the present investigation the quality standards of the selected plants (*Cichorium intybus, Lepidium sativum* and *Aegle marmelos*) were developed according to WHO guidelines. Antioxidant and nephroprotective activity were evaluated by using cisplatin induced nephrotoxicity model. *C. intybus, L. sativum* and *A. marmelos* treatment at dose of 300 and 600 mg/kg was found beneficial in cisplatin induced renal toxicity in our study, through the prevention of lipid peroxidation and preservation of antioxidant enzymes. It was observed that all the biochemical analysis and histopathological evaluation were brought back nearly to the normal level. On the basis of results of our study it might be concluded that the methanolic extract of *C. intybus, L. sativum* and *A. marmelos* have significant antioxidant and nephroprotective activities against cisplatin induced nephrotoxicity and the maximum activity was shown by the extract of *C. intybus* seeds extract at a dose of 600 mg/kg body weight as compared to other tested drugs. The pattern of antioxidant and nephroprotective activity was found as follows *C. intybus > L. sativum > A. marmelos*.

The present investigations justify the traditional claim of all selected plants as renal tonic. The pharmacological effect may be due to its protective effect on oxidative damages induced by nephrotoxins on kidneys or may be due to the presence of various phytoconstituens which are present in plant extracts. It can be presumed that nephroprotective action might be due to antioxidant phenolics and flavanoids which are present in these plants extracts and presence of these compounds was confirmed by phytochemical screening in the present investigation. Developed quality standards parameters may be used for identification, purity, quality and safety of the selected plants in industries and academic research institutes. The generated data can also be utilised for development of monographs of these plants.

Other organic solvent extracts of the selected plants can be prepared and screened for antioxidant and nephroprotective activities in future. Extensive and multidimensional further research is needed to elucidate the exact mechanisms of nephroprotective action of the plants extracts on cisplatin induced nephrotoxicity. Further, studies on isolation of constituents responsible for nephroprotective activity in methanolic extract of *C. intybus L. sativum* and *A. marmelos* are required and its molecular pharmacological activities by using other rodents may be considered in future. Clinical evaluation of these plants in human beings may be carried out for the above promising pharmacological activities.