CONCLUSION
Chapter 7

7. CONCLUSION

This study has compared the radioprotective effects of two herbal preparations from *H. rhamnoides* leaves i.e. SBL-1 and SBL-2. Amongst the two preparations, SBL-1 had shown higher potential for scavenging the Fenton reaction generated 'OH radicals, O$_2^-$ radicals and also demonstrated better reducing power than SBL-2 under in vitro conditions. Under in vivo conditions SBL-1 offered higher antioxidant potential than SBL-2 at lethal radiation dose (10 Gy). Treatment of mice with SBL-1 before irradiation had significant radioprotective effect on haemopoietic system. Inflammation, immune suppression and oxidative stress play important role in radiation induced multiple organ failure. Absence of visible signs of inflammation viz., swelling, edema and hair fall at snout region and haemorrhage and edema in internal organs of mice on day 5 after irradiation in animals treated with SBL-1 before irradiation (10 Gy) indicated the anti-inflammatory potential of SBL-1. Treatment with SBL-1 before irradiation resulted in normalization of radiation induced imbalance between pro-inflammatory and anti-inflammatory cytokines. SBL-1 treatment before irradiation protected the bone marrow cells from radiation induced genotoxicity and prevented the radiation induced increase in micronuclei and damage to genomic DNA in spleen. SBL-1 treatment before irradiation also resulted in normalization of radiation induced changes in liver and spleen architecture as evident from histological observations, suggesting the protective role of SBL-1 at tissue level. Therefore, SBL-1 could be an ideal candidate for developing a radioprotective agent.