7. SUMMARY AND CONCLUSION

Summarizing the results of the study,

- The subacute toxicity study did not show any treatment related mortality and adverse effects at 150, 450 and 1350mg/kg p.o. dose administration of hydromethanolic extract of *Holarrhena antidysenterica* and 200, 600 and 1800 mg/kg p.o. dose administration of chloroform extract of *Cyperus rotundus*.
- Presence of various phytoconstituents viz. steroidal alkaloids like conessine, holarrhenine and holarricine and flavonoids in the hydromethanolic extract of *Holarrhena antidysenterica* and presence of steroidal sesquiterpene hydrocarbons, monoterpenes, aliphatic alcohols and triterpenes in the chloroform extract of *Cyperus rotundus* are contributing to the pharmacological action in the treatment of IBD.
- MEHA (450 and 600 mg/kg) and CHCR (800 mg/kg) showed beneficial effect in DNBS induced IBD in rats. The protective effect might be attributed to anti-inflammatory and antioxidant activities.
- Cytokines regulate immune system and inflammatory processes. They are key mediators for producing colitis and are responsible for progression of inflammation. Treatments with MEHA and CHCR significantly reversed DNBS induced changes and possible mechanisms include direct modulatory action via down regulation of genes responsible for transcription of proinflammatory cytokines viz. IL-4, IL-6, IL-12 and IFN-γ.
- The efficacy of formulation containing extracts of *Holarrhena antidysenterica* was found to be significantly better when compared to Mesalamine treatment in patients with chronic ulcerative colitis with fewer chances of relapse and side effects.
In conclusion, present study demonstrates that anti-inflammatory and antioxidant activities of MEHA and CHCR showed significantly protective effects in DNBS induced IBD rats which was further substantiated with decreased fold of expression of IL-4, IL-6, IL-12 and IFN-gamma. And the monoherbal formulation containing extracts of *Holarrhena antidysenterica* is effective, safe and more economical alternative for the treatment of IBD patients.