CHAPTER 12
SUMMARY AND CONCLUSION

Cancer is a disease characterized by uncontrolled cellular growth, local tissue invasion and distant metastases and the free radicals have been implicated in carcinogenesis. Supportive to this, many plant extracts containing antioxidant principles have been reported to possess anti-tumor activity. In the present study, intraperitoneal inoculation of DLA cells in the mice produced an enormous increase in the cancer cell count, which indicated that there is progression of cancer in the animals. The reliable criterion for judging the anticancer effect of plant extract is reduction in viable cell count towards normal. It may be due to the extracts stimulate the growth and activity of immune cells by the production of Interleukins, which target tumor cells and cause lysis of the tumor cells by indirect cytotoxic mechanism. Furthermore, the reduced PCV and increased survival time of the mice suggest that the extracts might have exerted a delay in vascular permeability to the cells.

The reliable condition for judging the value of any anticancer drug is the prolongation of lifespan of the animal and decreased WBC count from blood. The reduction in RBC or hemoglobin percentage in tumor bearing mice may be due to iron deficiency (anaemia) or due to hemolytic or myelopathic conditions. Usually, myelosuppression and anaemia are the major problems encountered in cancer chemotherapy. The results showed that both the doses of Alcoholic and Aqueous extract has not only brought back hemoglobin content to normal but also the RBC count to normal. Analysis of the other hematological parameters such as WBC Count, differential cell count showed changes in the EAC-bearing mice. After 14 days of transplantation, daily oral extracts treated groups were able
to reverse the changes in the hematological parameters following to tumor inoculation.
This indicates that both the extracts posses protective action on the hemopoietic system.
The hematocrit is the blood that consists of red blood cells. The hematocrit (hct) is expressed as a percentage. A low hematocrit is indicated in condition such as anemia, blood loss (traumatic injury, surgery, bleeding colon cancer), nutritional deficiency (iron, vitamin B12, folate) and bone marrow problems. There is a decreased hematocrit percent in EAC-bearing mice and extract treatment retained the values more or less to normal.

All results conclude that ethanol and aqueous extracts of *Cinnamomum malabatrum* possess significant antitumor activity against DLA cell line bearing mice.