AYURVEDA is getting more popular as it has no side effects in which plants and plant products are the only ingredients. Intensive research is going on in the isolation of active principle from plants. Huge amounts are being spent by foreign countries for the research on medicinal plants for taking patent on a particular plant or a plant product. But no significant work is going on in India even though India has a good heritage of medicinal plants. This lacuna has to be filled up by involving in active research on medicinal plants.

We have screened many plants for anticancerous properties and Centella asiatica has been found to be very effective and hence was selected for the study as there is no systematic study on the medicinal effects of Centella asiatica on cancer.

Centella asiatica belongs to the family Apiaceae. In the Indian ayurveda literature it is considered as to be one of the ingredients of Rasayana. It is rich in saponins, essential oils, alkaloids, sesquiterpenes, anthocyanins, pectins, free amino acids, poly acetylenic derivatives, vitamins, different salts, sugars, enzymes etc.

Cancer is a mistifying disease which remain completely even now incurable in spite of large number of studies are going on all over the world. The major form of treatment of cancer is surgery and radiation. The chemotherapeutic agent can often provide temporary relief and can prolong
A successful anticancer drug with out causing any damage to normal cells are rare or practically nil. In this context, the use of plant materials in the treatment of cancer is more relevant. Even though India is enriched with very good medicinal plants, no comprehensive systematic and controlled survey of antineoplastic activity has so far been undertaken.

During cytotoxicity studies in DLA & EAC, we have found that Centella asiatica gave a significant cytotoxicity against DLA & EAC with out affecting normal cells. Detailed study was carried out by preparing extract of the plant with different solvents. Mice was used as the experimental animals for the study.

The anticancerous effect of the crude drug and partially purified drug from Centella asiatica was studied in DLA and EAC induced mice. The survival period was found to be increased significantly by the treatment. The drug increase the life span by about 128%. There was a significant increase in superoxide dismutase, catalase & Glutathione peroxidase activities during treatment of cancer. The methanol extract of the plant gave more pronounced effect in the above parameters. Glutathione reductase was brought to normal during treatment. Here also more significant effect was produced by the methanol extract. Similarly Glutathione-S-transferase activity was found to be increased. These parameters could be brought down in cancer by drug therapy. Acetone fraction of the methanol extract was found to have more anti-lipid peroxidation effects whereas petroleum ether fraction showed no antioxidant activity.

Lipid peroxidation was found to be increased in cancer. But treatment with Centella asiatica could control this increase. Acetone fraction of the methanol extracts was found to have more anti-lipid peroxidation effects whereas petroleum ether fraction showed no effect.
Serum enzymes like LDH, AST, ALT, ACP, ALP, activities were found to be increased in both DLA & EAC. But the plant extract (drug) treated mice showed a significant decrease in the activities of the above enzymes. Among the extracts, acetone and methanol extracts showed significant effects. GGT was found to be decreased in lymphoma bearing mice. Feeding of plant extract increased the enzyme activity. Significant decrease was produced when fed with acetone and methanol extracts whereas petroleum ether extract had no effect. Protein levels in liver & kidney were found to be decreased significantly in both the lymphomas. But the drug treatment had an interesting effect in increasing this level.

The anticancerous effect thus obtained has been confirmed by the solid tumor reduction studies. The tumour developed was determined by measuring the diameter of the tumour at right angles. The reduction in solid tumour was observed after the treatment. All the above observations clearly establishes the anti-tumour activity of the plant Centella asiatica.

It is also well documented that the reactive oxygen species (ROS) play a major role in tumour progression by cellular damage. From our study, it can be concluded that in cell line induced tumour also, the disease promotion might have taken place through ROS. It was also found that as the tumour progresses the anti-oxidant enzymes and antioxidants were found to be affected severely which might be affecting the cell resulting in cell death.

Treatment of the lymphomas with the crude extract and partially purified drug of Centella asiatica could control the changes in lipid peroxidation and the antioxidant deficiency, which might have resulted in the re-establishment of cellular metabolism and this might have controlled the cellular damage. All these observations clearly support the anticancerous effect of Centella asiatica.