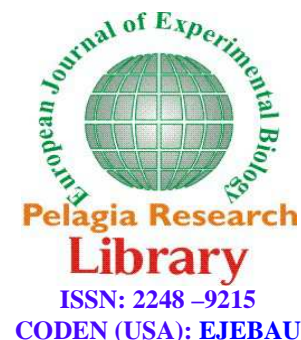




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Anti-cancer activity of *Arbudhcure* prepared from Aswathy medical hall

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ABSTRACT

The current research article deals with the anti-cancer activity of a poly herbal medicine prepared using various medicinal plants. In-vitro MTT assay was carried out and significant IC50 values are found for the Ayurvedic drug. Paclitaxol was used as positive control. % inhibition of the drug and the paclitaxol was compared and found that the Ayurvedic drug processes more anti-cancer activity than the positive control.

INTRODUCTION

Traditional medicine is the synthesis of therapeutic experience of generations of practicing physicians of indigenous systems of medicine. Traditional preparation comprises medicinal plants, minerals and organic matters etc. Herbal drug constitutes only those traditional medicines that primarily use medicinal plant preparations for therapy. The ancient record is evidencing their use by Indian, Chinese, Egyptian, Greek, Roman and Syrian dates back to about 5000 years [1]. About 500 plants with medicinal use are mentioned in ancient texts and around 800 plants have been used in indigenous systems of medicine. Indian subcontinent is a vast repository of medicinal plants that are used in traditional medical treatments, which also forms a rich source of knowledge. The various indigenous systems such as Siddha, Ayurveda, Unani and Allopathy use several plant species to treat different ailments. In India around 20,000 medicinal plant species have been recorded recently, but more than 500 traditional communities use about 800 plant species for curing different diseases. Currently 80 % of the world population depends on plant-derived medicine for the first line of primary health care for human alleviation because it has no side effects. Plants are important sources of medicines and presently about 25% of pharmaceutical prescriptions in the United States contain at least one plant-derived ingredient. In the last century, roughly 121 pharmaceutical products were formulated based on the traditional knowledge obtained from various sources.

MATERIALS AND METHODS

Preparation of Drug

The drug was prepared by Dr. Pankajaakshan P K using several medicinal plants. A series of procedures was followed and the final product is in the form of nice powder.



Materials used for the preparation

Composition of the Formulation

The formulation of the prepared drug is as follows

Each 100 gm of the powder contains 4 gm each of the following

1. Varana (*Crataeva religiosa*)
2. Sairyaka (*Strobilanthes ciliatus*)
3. Shatavari (*Asparagus racemosus*)
4. Dahana (*Plumbago zeylanica*)
5. Morata (*Chenomorpha fragrans*)
6. Bilwa (*Aegle marmelos*),
7. Vishanika (*Aristolochia bracteolata*),
8. Brihati (*Solanum melongena*)
9. Bhadra (*Aerua lanata*)
10. Karanja (*Pongamia glabra*)
11. Pootikaranja (*Holoptelia integrifolia*)
12. Jaya (*Premna corymbosa*)
13. Pathya (*Terminalia chebula*),
14. Bahalapallava (*Moringa olifera* / drum stick)
15. Darbha (*Desmostachya bipinnata*)
16. Rujakara (*Semicarpus anacardium*).
17. Amla – (*Emblica officinalis*)
18. Haritaki – (*Terminalia chebula*)
19. Vibhitaki – *Terminalia bellirica*
20. Unknown Drug -1
21. Unknown Drug -2
22. Unknown Drug -3
23. Unknown Drug -4
24. Unknown Drug -5
25. Tulasi (*Oscimum sanctum*)

Preparation of the drug extract

5 gm of the powdered drug was defatted with 50 ml hexane for 30 minutes under reflux. The defatted sample was then extracted using soxhlet apparatus for 3 hours and filtered through wattmans filter paper. The filtrate was concentrated at 40 C using oven and made upto 25 ml. this extract was the used for the in-vitro studies [6].

In-vitro assay [7]

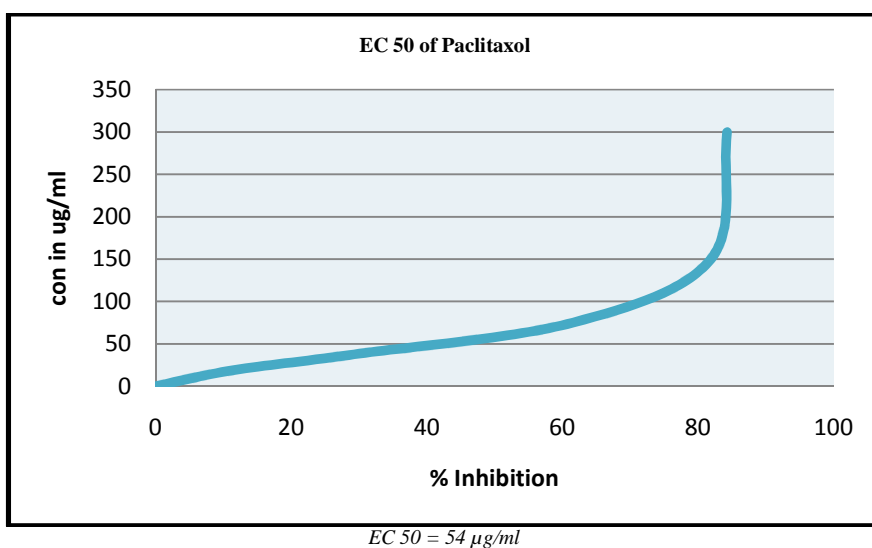
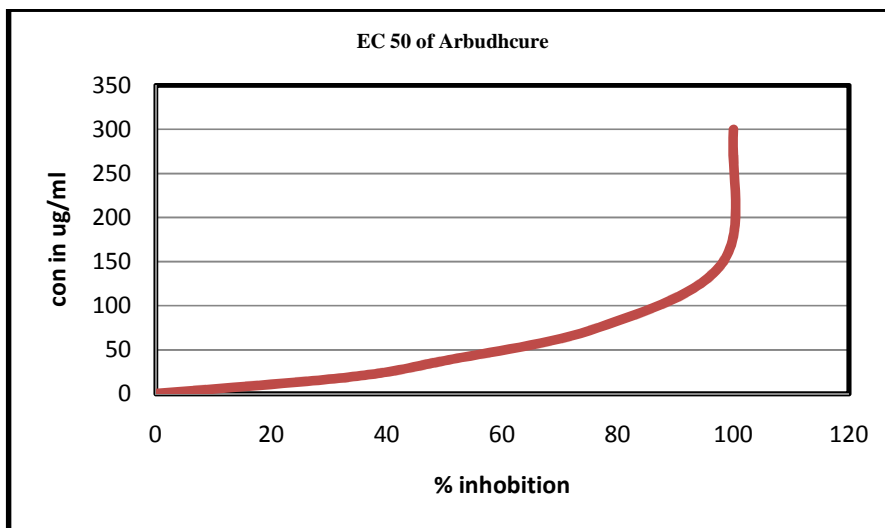
The human cervical cancer line (HeLa) was obtained from Sigma-Aldrich, Bengaluru and grown in Eagles Minimum Essential Medium (EMEM) containing 10% fetal bovine serum. All cells were maintained at 37°C, 5% CO₂, 95% air and 100% relative humidity.

The monolayer cells were detached with trypsin-ethylene diaminetetraacetic acid to make single cell suspensions and viable cells were counted by trypan blue exclusion assay using a hemocytometer [8]. The cell suspension was diluted with medium containing 5% FBS to give the final density of 10^5 cells/ml. The lab conditions were made same as above mentioned. After 24 hours cell were treated with serial concentrations of the water dilutions of the Ayurvedic drug. After their addition to the well the plated were incubated for an additional 48 hours.

RESULTS

Concentration ($\mu\text{g/ml}$)	% cell inhibition of Ayurvedic drug	% cell inhibition of Paclitaxol
Control	0.00	0.00
18.75	33.33	11.43
37.50	50.00	29.25
75	76.62	61.53
150	98.22	81.87
300	100.00	84.28

Percentage inhibition of Ayurvedic drug and standard compound



CONCLUSION

From the present study we conclude that the prepared Ayurvedic drug is having high anti-cancer activity. The EC 50 was found to 33 µg/ml and that of the standard compound in only 50µg/ml. Further in-vivo studies using animal models will be initiated. The emergence of this drug will be a boon for the entire cancer treatment.

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