

Studies on Anti-Cancerous Drug Anantmool Hemidesmus indicus (L.) R. Br. and Substitute Decalepis hamiltonii Wight & Arn.

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ABSTRACT

Anantmool is a significant medicinal plant, which is described in Ayurvedic literature and current science because of the presence of its number of remedial properties. Anantmool is scientific name of Hemidesmus indicus (L.) R. Br. and its substitute Decalepis hamiltonii Wight & Arn. belongs to the family Apocynaceae. It is used against a variety of diseases due to the presence of various phytochemicals viz.lupeol, β-amyrin, 2-Hydroxy-4-methoxybenzaldehyde, sitosterod etc. The roots of the Anantmool showed protective activity against various cancers. H. indicus and D. hamiltonii has potential activity on HeLa cell so these drugs have considerable anticancer activity on cervical cancer.

INTRODUCTION



& Roots





The toxic effect was evaluated in HeLa cancerous cell lines exposed to various concentrations of synthesized root extract of H. indicus and D. hamitonii by the MTT assay. Cancerous cells were seeded over night at the number of 1×10^2 per well and then natured with number of concentration of extracts ranging 200 µl/ml for 5 hrs respectively. At the end of treatment medium was cut off and cells were treated with 20 µl of MTT (5 mg/ml in PBS) in fresh medium (50 µl) for incubation. After four hrs. formation crystals were formed due to mitochondrial rductase of MTT and changed color to purple. Those were dissolved in DMSO (150 µl/ well) and absorbance was read at 595 nm (Masters, 2000; Wilson, 2000, Skehan et al. 1990).







Results and Discussions

The cytotoxicity study was carried out for plant extract of *H. indicus* and *D. hamiltonii* roots. These extract was screened for its cytotoxicity against HeLa cell lines at different concentrations to determine the IC_{50} (50% growth inhibition) by MTT assay. Percentage cell viability of cell lines was carried out by using Trypan blue dye exclusion technique. It showed that the cell line HeLa viability 70-72%, live cell count 1.728×105, total cell count 2.40×105 and pH 6.9.

In *H. indicus* and *D. hamiltonii* was found that the % growth inhibition increasing with increasing concentration steadily up to 0.0196 mg/ml on HeLa cell line and IC₅₀ value of this assay was 265 and 279 and R^2 value was 0.950 and 0.973 respectively (Table and Fig. 1).



Fig.1 :Methanolic extract of *H. indicus* and *D. hamiltonii* for HeLa cell line by MTT assay.

CONCLUSION

cytodifferentiating, cytotoxic The and cytostatic activities of Hemidesmus indicus offers a scientific basis for its use in traditional medicine. Its potent antileukemic activity provides a pre-clinical evidence for its traditional use in anticancer pharmacology. Further experiments are worthwhile to determine the anticancer potential of this plant decoction and its components. The overall study evaluates that *H. indicus* and *D.* hamiltonii has potential activity on HeLa cell so these drugs have considerable anticancer activity on cervical cancer.

Table 1: Determination of cytotoxicity by MTT assay (H. indicus and D. hamiltonii)

Conc.	H. indicus				D. hamiltonii			
Mg/ml	¹ HeLa cell line		IC ₅₀	R ²	HeLa cell line		IC ₅₀	R ²
	Absorbance	% inhibition			Absorbance	% inhibition		
10	1.519	62.61		0.950	1.624	63.91	279	0.070
5	1.560	60.56	265		1.695	61.66		0.973
2.5	1.62	57.54			1.716	58.64		
1.25	1.63	57.04			1.763	58.14		
0.625	1.658	55.62			1.815	53.52		
0.312	1.735	51.79			1.835	52.57		
0.156	1.745	51.29			1.847	52.17		
0.078	1.918	42.66			1.891	51.76		
0.0391	1.93	42.03			1.991	43.23		
0.0196	2.005	38.28			2.247	37.14		

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