The novel and potential compounds from plant origin that is used in the treatment and prevention of diseases leads to discovery of new drugs [1]. The common alternative for cancer prevention and the treatment and prevention of diseases leads to discovery of new anticancer drugs currently used are isolated from the plants and isolated from plants are reported for anticancer property [7, 8]. The alkaloids, phenylpropanoids, and terpenoids isolated from plants are reported for anticancer property [7, 8]. Literature review suggests the plant is reported to have Antitumor [9], Wound healing effect [10], Hypotensive effect [11], Antianaphylactic activity [12], Anti-inflammatory effect, Analgesic effect [13], Anti-microbial effect [14] and isolated Pyrrazolidine alkaloids [15]. For the present study the cytotoxic activity of methanolic extracts of stem and leaf of Heliotropium indicum was assessed on HeLa cell lines.

The leaves and stem of H. indicum were collected in the month of December from nagercoil and dried in shade. The shade dried leaves and stem were powdered to get a coarse powder authenticated by Dr. D. Stephen, Madurai medical college. The extraction s were carried out by using solvents of increasing polarity using a soxhlet apparatus using solvents of increasing polarity. The crude extracts of stem and leaf of Heliotropium indicum were prepared using soxhlet apparatus using solvents of increasing polarity. The study was performed using methanolic extracts against human cancer cell line (HeLa) using MTT assay to analyze the cell growth inhibition.

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Methods: The crude extracts of stem and leaf of Heliotropium indicum were prepared using soxhlet apparatus using solvents of increasing polarity. The study was performed using methanolic extracts against human cancer cell line (HeLa) using MTT assay to analyze the cell growth inhibition.

Results: The study was performed using methanolic extracts against human cancer cell line (HeLa) using MTT assay to analyze the cell growth inhibition. The results showed that the methanolic extracts of stem and leaf of Heliotropium indicum possessed a good amount of anticancer activity and IC50 for both the extracts found to be 200 µg/ml. Whereas stem extracts exhibited excellent activity up to 64.5% at 200 µg/ml and followed by leaf extract up to 49.67% at 200 µg/ml. Obtained results support the traditional claim of the plant.

Conclusion: The methanolic extracts of leaf and stem of H. indicum exhibits cytotoxic activity. Hence, Obtained results support the traditional claim of the plant.

Keywords: Heliotropium indicum, Hela cell lines, MTT assay, Stem and leaf alcohol extract.
The methanolic extracts of leaf and stem of *H. indicum* exhibits antiproliferative activity and showed interesting results. Further focus should be moved towards isolating the potential phytochemicals responsible for the activity. Our results provide the basis for the further investigation and potential identification of medicinal compounds of anti-cancer property. Elucidating the mechanisms by which these anti-cancer properties are derived is of crucial importance to identify, select for and optimize therapeutic compounds.

A graph of concentration versus percentage growth inhibition was plotted, and the concentration at which 50% cell death occurred was considered as the IC50 value. Before adding MTT, bright field images (Olympus 1X81, cell Sens Dimension software) were taken for visualizing the cell death.

The result reveals the percentage yield for the extracts of leaf and stem to be 12.2%w/w and 15%w/w. The methanolic extracts of leaf and stem of *H. indicum* showed a considerable activity against the tumor cell-lines at the tested concentrations. Fig. 1 shows the antiproliferative results as inhibition percentage at five concentrations (200-1000μg/ml) for those extracts as an inversely dose-dependent behavior. Relative death percentage of leaf extracts was 49.67% and 14.82% at 200 and 400 μg/ml respectively. Whereas stem extracts have shown moderately good activity compared to leaf, and was ranging from 64.52% to 16.11% at 200-1000μg/ml in an inversely dose-dependent manner. The IC50 value of leaf and stem extracts are shown to be at 200μg/ml. Fig. 2 depicts the cytotoxic effect to extracts on HeLa cell line. Recently, medicinal plants have emerged as attractive candidates for cancer chemoprevention because of their safety, relative to cytotoxic synthetic agents [17].

Many anticancer drugs are effective against HeLa cells by causing apoptosis through the expression of caspase-3, generating reactive oxygen species (ROS) and damaging DNA [18]. In addition, HeLa cells have been reported to contain human papilloma virus 18 (HPV-18) sequences, a low expression of p53 and normal expression of pRB (retinoblastoma suppressor). The p53 gene appears to trigger programmed cell death (apoptosis) as a way of regulating uncontrolled cellular proliferation in the setting of aberrant growth signals [19]. However, it is necessary to perform many other studies both in vitro and in vivo to determine their true potential for the development of medicines.

**CONCLUSION**

The methanolic extracts of leaf and stem of *H. indicum* exhibits antiproliferative activity and showed interesting results. Further focus should be moved towards isolating the potential phytochemicals responsible for the activity. Our results provide the basis for the further investigation and potential identification of medicinal compounds of anti-cancer property. Elucidating the mechanisms by which these anti-cancer properties are derived is of crucial importance to identify, select for and optimize therapeutic compounds.

**CONFLICT OF INTERESTS**

Declared None

**REFERENCES**


