

## **Anticancer potential of *Alternanthera sessilis* extract on HT-29 human colon cancer cells**

### **ABSTRACT**

**Objective:** To identify the bioactive extracts from *Alternanthera sessilis* and investigate its cytotoxicity potential against colon cancer cells, HT-29. **Methods:** This study examined the effects of three parts (aerial, leaf, stem) of whole plant on HT-29 colon cancer cell lines. Three different extracts from the plant parts were prepared by maceration technique using 80% ethanol. The anticancer activities were determined using MTT, clonogenic, cell motility and AOPI assay. The chemical composition profiling was analyzed by GC-MS. **Results:** Among three plant part extracts, leaf extract greatly suppressed the growth of colon cancer cells in time and dosage-dependent manner, followed by aerial and stem. The cytotoxicity results were rationalized with clonogenic, cell motility and AO/PI assay, where extract showed the most active activity compared to aerial and stem extracts. GC-MS analysis of leaf extract showed there were various recognized anti-cancer, anti-oxidant and anti-inflammatory compounds. **Conclusions:** Amid the screened extracts, the leaf extract exhibits the credible cytotoxic, anti-proliferative and apoptotic activity and hence, our findings call for additional research to conclude the active compounds and their mechanisms determining the apoptotic activity.

**Keyword:** *Alternanthera sessilis*; Colorectal cancer; Anticancer; HT-29; Apoptosis