

## **Stem hexane extract of *strobilanthes crispus* induces apoptosis in triple-negative breast cancer cell line**

### **ABSTRACT**

*Strobilanthes crispus* is known to possess multiple health beneficial effects and reported to be traditionally used as medicine in several countries. This study was to investigate the anti-proliferative effects of *S. crispus* leaves and stem extracts on MDA-MB-231 by examining their effects on apoptosis pathway. The chemical compounds were extracted from leaves and stems using methanol followed by solvent partitioning. Two extracts were found to prevent MDA-MB-231 cell growth at the IC<sub>50</sub> of 45 µg/mL and 60 µg/mL, respectively, for leaf water (LW) and stem hexane (SH) extracts. Results showed that SH extract induces apoptosis by suppressing the protein expression of BCL-2 while the expression of pro-apoptotic proteins such as BAX and caspase nine were unchanged. Decrease of cyclin A2 in SH-treated cells suggested this effect was associated with the dysregulation of cell cycle. However, LW extract showed no effects on apoptosis and cell cycle arrest in the treated cells. Taken together, our results showed SH extract of *S. crispus* exhibiting their anti-proliferative activities by modulating apoptosis and cell cycle, but the underlying mechanisms exerted by LW extract requires further investigation.