

ABSTRACT

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Study Program : Bio Medicine (Infectious Disease)

Title : Cytotoxicity Evaluation of *Alpinia galanga* Towards T47D and Vero Cell Lines

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Breast cancer is accounted as one of the leading causes of death. Several golden standards that commonly prescribed by general practitioner showed serious side effect to the cancer patients. As the consequences, research on anticancer drug has broadened to the area of herbal medicine to find compound which can be used as the drug candidate. In this study, ethanolic extract of *Alpinia galanga* was prepared and its cytotoxicity test towards T47D breast cancer and Vero normal cell lines were observed using MTT assay. In addition, cell cycle distribution and apoptosis test were conducted using propidium iodide and FITC Annexin V using flowcytometry technique to measure the effect of *Alpinia galanga* extract towards T47D cell lines. In dose-dependent manner, IC₅₀ of *Alpinia galanga* on T47D and Vero cells were 74,5 $\mu\text{g/mL}$ and 115,6 $\mu\text{g/mL}$ respectively. Flowcytometry analysis indicated that *Alpinia galanga* extract induced SubG1 population. Furthermore, induction of apoptosis was exhibited by cell shrinkage that observed under the microscope. The outcome of apoptotic assay revealed that the highest percentage of cell death in *Alpinia galanga* treated cells is caused by necrosis.

Keywords: Alpinia galanga, T47D, Vero, MTT assay, Cytotoxicity, Apoptosis, Cell cycle