

CYTOTOXICITY EFFECT OF *CYBBOGON NARDUS* METHANOLIC FRACTION AGAINST VERO AND CAO3 CELLS

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ABSTRACT

Ovarian cancer has contributed to death among women with 50% survival rate. Conventional treatments available such as chemotherapy and radiotherapy have low successful rate of recovery. Plants provide valuable resource of secondary metabolites that possessed various biological activities. Secondary metabolites from *Cymbopogon nardus* have not been widely studied compared to its other sister species. Methanolic fractions of *Cymbopogon nardus* cytotoxicity were tested against Vero and Caov3 cell line. The objective of the study was to screen potential anticancer compound from the fractions. Test concentrations were based on fractions' lethal concentration, 1.0 LC₅₀ to cause 50 % Vero cell death. At 0.5 LC₅₀ fraction C2 showed higher toxicity against Caov3 compared to Vero cells at 16.6 % and 85.6 % cell viability, respectively. Further fractionation of C2 with column chromatography yielded 9 subfractions with C2.1 cytotoxicity against Caov3 and Vero cell viability at 39.9 ± 1.9% and 94.75 ± 1.2%, respectively. The subfraction was spotted on thin-layer chromatography, TLC and ran with solvent system acetic acid: dichloromethane:methanol; 1:8:1. The separation of the subfraction C2.1 revealed 4 spots and these spots were scrapped for cytotoxicity assay. At test concentration of 25 µg mL⁻¹, the second spot has the highest toxicity towards Caov3 with 39.65 ± 0.9 % cell viability while Vero was at 90.03 ± 1.3 %. The GCMS analysis of the second spot showed that it was stearic acid. The selective cytotoxicity of stearic acid against Caov3 indicates that it has potential to be used as anticancer agent.

Keywords: *Cymbopogon nardus*, Vero, ovarian cancer, cytotoxicity.