CYTOTOXICITY TEST AND EFFECT OF *Aaptos suberitoides* EXTRACT ON BREAST CANCER CELL LINE T47D IN VITRO

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Abstract

*A.suberitoides* is one of sponges that showed chemopreventive activity. Secondary metabolites come from *A suberitoides* is Alkaloid. Alkaloid have important biology activity for health as anticancer agent. The main purpose of this research is to determine the effect of *A.suberitoides* extract on breast cancer cell line T47D in vitro, that using cytotoxicity test.

The activity of *A.suberitoides* extract to inhibit the growth of cancer cell was determined by MTT assay. After the LC$_{50}$ calculated, the cell proliferation kinetic profiles were observed by doubling time test at 24$^{th}$, 48$^{th}$, and 72$^{th}$ hours and the IC$_{50}$ calculated. Apoptosis studies were done by double staining test using acridine orange and ethidium bromide.

The study was used Completely Randomized Design with 5 treatment group, there are group I (treatment), II (control cell), III (positive control), IV (medium control) and V (cosolven control), with three times duplication. The concentration of extract that use 7.5; 15; 30; 60; 120; 240; 480; 960 and 1920 µg/mL. The concentration of cisplatin, medicine cancer that use 2, 4, 8 dan 16 µg/mL. The data was analyzed with ANOVA and be continued by LSD test.

The result of this research shows that *A.suberitoides* extract have not cytotoxic activity on breast cancer cell line T47D with LC$_{50} = 528.828$ µg/mL at cytotoxicity test with MTT assay.
based NCI (National Cancer Institute) criterion, that a compound was said to have sitotoksisitas's effect that poten if that compound have point \( LC_{50} \leq 20 \ \mu g/mL \). At doubling time test, \( A. \) suberitoides extract are not able to inhibit proliferation of breast cancer cell line T47D with \( IC_{50} = 194.487 \ \mu g/mL \) based criterion of Kamuhabwa et al. (2000), that extract has to assess \( IC_{50} = 100 \ \mu g / ml \) can say to have antiproliferasi’s potencies. And \( A.\) suberitoides can induction apoptotic on breast cancer cell line T47D with activity as big as 19.23 %.

Key Words: \( A.\) suberitoides, T47D breast cancer cell, Cytotoxicity test