ABSTRACT

BAIQ AYU A. MUSTARIANI. Potential of Kaempferol Soursop Leaves as Inhibitor Raji Cancer Cell Proliferation. Under direction of SUMINAR S. ACHMADI, IRMA H. SUPARTO, and SILMI MARIYA.

Leaves of soursop (Annona muricata) has been widely studied, particularly as anti-cancer, but research on flavonoids as anticancer partion isolated from the leaves of the soursop has not been found. Therefore, the purpose of this study is to determine the effectiveness of flavonoids isolated from leaves of the soursop in inhibiting cancer cell proliferation using Raji cells (ATCC CCL-86). Extraction was done by maceration technique using successive solvents, i.e. $n$-hexane, CH$_2$Cl$_2$ and MeOH-H$_2$O. Separation of active extract used preparative thin layer chromatography. Methanolic activity assay extract was performed on normal cells to determination initial concentration on cancer cells showed, that the lowest inhibition was at concentrations of 1000 µg mL$^{-1}$ − 500 µg mL$^{-1}$ with percent inhibition 48% and 31%, respectively. The flavonoids produced a single spot on thin layer chromatograph with Rf value of 0.87. Identification of flavonoids by UV-Vis spectrometer and high performance liquid chromatography confirmed that the flavonoid was kaempferol. Kaempferol extract obtained wastested on Raji cells and Vero cells. For Raji cells the methanolic extract inhibited 76% of the cells at concentration of 250 µg mL$^{-1}$ but for the normal cells it only inhibited 20%. These results suggest that kaempferol from the soursop leaf can inhibit cell proliferation of Raji cells but gives minimal toxic effect on Vero cells.

Keywords: Annona muricata, flavonoids, kaempferol, cancer cell proliferation.