MOLECULER TARGET THERAPY SOME FLAVANONE ISOLATED COMPOUNDS FROM KUNCI PEPET (*KAEMPFERIA ROTUNDA*) BY INVITRO AND INVIVO XENOGRAF METHOD IN HUMAN BREAST CANCER

Sri Atun & Retno Arianingrum

ABSTRACT

The purpose of this study was to determine the cytotoxic activity of extracts and flavanones isolated compounds from kunci pepet, as the molecular mechanisms of anti proliferation, apopotosis, and cycle inhibition in T47D cancer cells by in vitro, and moleculer targeted therapy against breast cancer cases by in vivo with xenograft method . The method of the research is to conduct experiments in the laboratory, starting with the selection and collection of kunci pepet rhizomes , as well as isolation of the methanol extract to reproduce pure flavanone compounds for it is sufficient for further research. This study will be conducted in stages over two years. The focus research of 1st year is to test the cytotoxicity of extracts and isolated compounds, the molecular mechanisms through apopotosis test and cycle inhibition in T47D cancer cells by in vitro. 2nd Year will be followed by a cytotoxicity assay on vero cells (normal cells) and activity test of flavanones and extracts that show high activity as moleculer targeted therapy against breast cancer cases in vivo xenograft method. The result of 1st year of the study showed that the chloroform extract showed the highest cytotoxic activity with IC_{50} 41.720 µg/ml, methanol extract with IC_{50} of 71.6 µg/ml . Pinostrombin isolated compounds and 5,7 - dihidroksiflavanon showed cytotoxic activity with IC_{50} 59.38 and 122.708 µg/ml. Apoptosis by Flocytometry test showed that chloroform extracts and pinostrombin caused cell dead. The cell cycle test from pinostrombin and chloroform extract inhibits cell growth in G0 - G1 phase. The results of the second year of the study showed hexane, methanol, chloroform extract from Kunci pepet and isolated compounds are relatively non-toxic to vero cells. Chloroform extract and pinostrombin can reduce the volume of breast tumors in mice on xenograft method. The optimum dose of chloroform extract of 500 mg / kg bw, while pinostrombin optimum dose of 20 mg / kg bw.

Keywords : Kaempferia rotunda ; T47D breast cancer ; molecular target therapy