ABSTRACT

ELIZA HALIM. Bioactive Compounds and Nutrients Content of Propolis and Immunomodulator Effect to CD8+ T Cell in Breast Cancer Patient. Under the direction of HARDINSYAH, NOORWATI, AHMAD SULAEMAN, I MADE ARTIKA, YAHDIANA.

The objectives of this study were to analyze bioactive compound of Indonesian Propolis (IP) compare with Brazilian Propolis (BP), nutrient content, antioxidant activity and safety (LD50) of IP, the effect of the propolis on inhibition of MCF7 human breast cancer cell line and immunomodulatory effect of propolis to produce T cell CD8+ in breast cancer blood patients. The bioactive compound and nutrient content analyzed by HPLC and GCMS, antioxidant activity was analyzed with DPPH method by using spectrophotometer. The safety of IP was determined through animal assay using 40 DDY mice, the inhibition of MCF7 was determined in vitro through MTT assay and immunomodulatory effect analyzes by clinical trial on breast cancer patients in Dharmais Cancer Hospital. This study was conducted in Jabodetabek. The results showed that the bioactive compound, nutrient content, antioxidant activity and inhibition capacity of IP are different from BP, the MCF7 inhibition capacity of IP is better than BP eventhough antioxidant activity of IP lower than BP. The bioactive compound in IP are fenol compounds, α amyrin and cyclolanost, eudesmane, ethyl acridine, lupeol, friedoleanan and pyrimidine and bioactive compounds of BP are α Amyrin, β Amyrin, hydrocinnamic ethyl ester, Cyclolanost, fenol compound and pyrimidine.

IP could inhibit MCH7 human breast cancer cell line proliferation stronger than BP. The safety study of IP showed that IP is safe to be consume by human. A human intervention study with duration 21 days supplemention Indonesian propolis 3x300 mg/day conducted in Dharmais Cancer Hospital in Jakarta. The study was applied Completely Randomized Design, there were 2 group with 15 patient breast cancer each, 1 group intervension. and 1 group placebo. Ten patients were drop out during the treatment, therefore only 20 patients were fulfilled the criteria of analysis. Ethical clearence was obtained from University of Indonesia.

After 21 days the result showed: Indonesian propolis intervension significant affected CD8+ absolut and CD8+ % level in breast cancer patient’s blood, the conclusion of this clinical study is Indonesian propolis improve immune function in breast cancer patients because Indonesian propolis has an action as immunomodulator.

Keywords: Propolis, bioactive compound, LD50, MCF7, CD8+, SOD, antioxidant nutrient, immunomodulator.