ABSTRACT

LUSIANA. Antioxidant Ability of Medicinal Plants in Apoptotic Modulation of Yeast Cells (Saccharomyces cerevisiae). Under the direction of SULISTIYANI and I MADE ARTIKA

Various plants have been used traditionally by communities for treatment of cardiovascular disease. In this research, leaf extracts of salam (Eugenia polyantha Wight), jati belanda (Guazuma ulmifolia Lamk.), and guava (Psidium guajava) were studied. This study aims to determine the effect of the antioxidative potential of these extracts on the ability to modulate apoptosis in yeast (Saccharomyces cerevisiae) cells. Antioxidative potentials were analyzed using Thiobarbituric acid (TBA) assay by measuring the concentration of Malonaldehyde (MDA) upon linoleic acid oxidation using spectronic at 532 nm and vitamin E was used as a control antioxidant. Apoptotic activity was determined by counting the colony of yeast cells and measuring the frequency of petite yeast cells after treatment with each extract followed by incubation for 24 hours. The results of viability test showed that the amount of yeast cells colony decreased after 24 hours incubation. The highest antioxidative potential is showed by leaf extract of salam at 100 ppm which inhibited the concentration of MDA as much as 68.17%. This treatment gives low petite frequency (21.22%). From this research it can be concluded that salam extract showed highest antioxidative potential as well as highest inhibition of apoptotic activity in yeast cells (Saccharomyces cerevisiae).

Key words: apoptotic, antioxidant, Eugenia polyantha Wight, Guazuma ulmifolia Lamk., Psidium guajava, Saccharomyces cerevisiae.