

INNOVATION OF ANTI-HYPERCHOLESTEROLEMIA FROM THE EXTRACT OF RAMBUTAN LEAVES (*Nephelium lappaceum*)

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ABSTRACT

Hypercholesterolemia is considered as a deadly disease because it can lead to cardiovascular disease (CVD) through atherosclerosis. The COVID-19 pandemic worsens the condition by limiting people's workout routines, and increasing the demands of fat rich foods. Indonesia is one of the largest rambutan producers but the leaves are often ignored. Rambutan leaves (*Nephelium lappaceum*) contain various secondary metabolites like flavonoid and phenolics. The purpose of this research is to see the potential of rambutan leaves extract as anti-hypercholesterolemia. The extraction of secondary metabolites in rambutan leaves was done using 70% ethanol. To identify the flavonoid, we use the Shinoda's test. To identify the phenolic, we use the Ferric Chloride test and FTIR. The anti-cholesterol potency test was performed by firstly determining the maximum wavelength to construct a cholesterol standard curve. The maximum wavelength obtained was 575 nm and so a calibration curve was obtained in that wavelength. The determination of standard curve was done by preparing a 5 mL ethanol 96% blank solution and 8 solutions made of different concentration volumes of cholesterol 1000 ppm, 2 mL of FeCl₂, 1 mL of H₂SO₄, and ethanol 96% prior to the UV-Vis spectroscopy test for absorbance using the previously obtained maximum wavelength. Next, another UV-Vis spectroscopy test was performed to confirm the cholesterol absorption in different concentrations of rambutan leaves extract. It is found from this test that in the optimum 1% rambutan leaves extract solution, there is a 45.9% decrease in cholesterol content. In addition, a further reaction test between cholesterol and the extract was done. To summarize, these results confirmed the possibility of secondary metabolites present in rambutan leaves to have the potential to counter hypercholesterolemia.

Keywords: *Nephelium lappaceum*, cholesterol, hypercholesterolemia, HMG-CoA reductase