ABSTRACT

IN VITRO TEST OF CHOLESTEROL LEVEL REDUCTION SUSPENSION OF EFFERVESCENT GRANULE CHITOSAN MANGROVE CRAB SHELL (Scylla serrata) WITH ACID COMPARISON USING DRY GRANULATION METHOD

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Mangrove crabs (Scylla serrata) are one of the animals that are widely consumed and cultivated in Indonesia, so they produce a lot of crab shell waste. One effort to deal with environmental pollution caused by crab shells is to process crab shell waste into chitosan. Chitosan is a natural linear polysaccharide formed by chitin deproteinization, demineralization, and deacetylation. Mud crab shells contain substances that can be used as raw material for making chitosan which has health benefits, one of which is as a cholesterol-lowering supplement. Therefore, an effervescent granule suspension preparation was made. The choice of effervescent granule suspension preparation is because chitosan is not soluble in water but is soluble in acid. The aim of this study was to determine the effectiveness of mud crab (Scylla serrata) shell chitosan effervescent granule suspension in reducing cholesterol and to determine whether the ratio of citric acid and tartaric acid in F1 (10:20) and F2 (13:26) had an effect in reducing levels cholesterol. Testing for reducing cholesterol levels was carried out using an in vitro test using UV-Vis spectrophotometer at a maximum wavelength of 412 nm. The test was carried out with Lieberman Burchad reagent. The positive control used was simvastatin 10 mg. In evaluating mud crab (Scylla serrata) shell chitosan, the chitosan was brownish white in color, tasteless and odorless, water content 9.3% ± 0.57, ash content 5.9% ± 0.45, degree of deacetylation 81% ± 9 .47, ninhydrin is purple. In the in vitro test of suspension of chitosan effervescent granules from mangrove crab (Scylla serrata) shells, the results of a reduction in F1 cholesterol levels (10% : 20%) were 13.21% ±8.07. The results of reducing F2 cholesterol levels (13% : 26%) were 18.82% ± 5.15. The results of simvastatin reducing cholesterol levels were 17.96% ± 2.06. In the results of the independent t-test comparing F1 and F2, the results obtained from the independent T-test showed a value of 0.377. The results of the independent T-test were ≥ 0.05, it can be concluded that in the independent T-test there was no significant difference between the two formulas or there was no effect of acid concentration on chitosan.

Keyword : *Scylla serrata, chitosan, cholesterol, granule effervescent*