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Preparation of nanoparticles of the extract of the extract of brown seaweed (*Sargassumpolycystum*) and *in vivo* antiplatelet testing

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Abstract:Brown seaweed (Sargassumpolycystum) contains fucoxanthin and flavonoids where platelet anti-aggregation activities are found. Brown seaweed is macerated in 96% ethanol. The formation of nanoparticles can improve the stability and activity of brown seaweed extracts. This research was conducted to determine the ratio of the platelet anti-aggregation effect between extracts and nanoparticles of brown seaweed. The nanoparticles were made using the method of ionic gelation by mixing 1% chitosan solution with 0.1% brown seaweed extract solution which were then reacted with 0.1% NaTPP and 1% tween80. Those nanoparticles were characterized by an average particle size of 294.9 nm; the average zeta potential by 38.2 mV; and spherical and irregular particle morphology. The platelet antiaggregation activities differ significantly in bleeding time and coagulation time between the extracts and the nanoparticles of brown seaweed. The percentages of increases in the bleeding time and the coagulation time with a dosage of extracts by 400 mg/kg BW were 23.53% and 30.55%, respectively; while the percentages of increases in the bleeding time and the coagulation time with a dosage of nanoparticles by 400 mg/kg BW were 61.15% and 63.50%. Keywords : brown seaweed extracts, nanoparticles, fucoxanthin, chitosan, sodium tripolyphosphate, anti-aggregation.

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