

Histological effect of *Kappaphycus alvarezii* on liver of hypercholesterolemic induced Sprague-Dawley rats

ABSTRACT

Kappaphycus alvarezii is a red seaweed claimed to have an anti-inflammatory, anti-oxidant, anti-microbial, anti-obesity as well as lipid lowering properties. It contains a significant amount of soluble dietary fibers, proteins, minerals and fatty acids which are essential for human nutrition. The present study evaluated the effects of *K. alvarezii* on the liver of hypercholesterolemic induced rats. 30 male Sprague-Dawley rats were used. Diet-induced hypercholesterolemic rats were fed with 5% and 10% *K. alvarezii* in comparison with normal control, high fat diet (HFD) and atorvastatin-treated rats. Body weight and lipid profiles were measured every two weeks and upon sacrificed, liver were collected for the histological examination. Atorvastatin-treated rats and rats fed with 5% and 10% *K. alvarezii* had significantly reduced weight gain, TC, LDL cholesterol and increase HDL level compared to HFD group. TG level was slightly reduced when compared to normal group. Liver histological section showed lipid storage in hepatocytes of HFD group and atorvastatin treated rats. Simple steatosis was observed in these groups without significant inflammation or fibrosis. An improvement of liver histology was noted in rats fed with 5% and 10% *K. alvarezii*. *K. alvarezii* is suggested to have hepatoprotective effect which probably due to the antioxidant content as well as the soluble dietary fibers. This study also suggested that HFD may induce non-alcoholic liver diseases which characterized by presence of simple hepatic steatosis.

Keyword: Seaweed; Fatty liver; Anti-oxidants