

Antioxidant and hypolipidaemic activity of red seaweed, *Gracilaria changii*

Abstract

The edible red seaweed, *Gracilaria changii*, was collected from the coastal area of Sarawak, Malaysia, and evaluated for its hypolipidaemic properties using high cholesterol/high fat (HF) induced male Sprague–Dawley rats. In the in vivo study, the HF diet group showed significantly higher total cholesterol (TC), low density lipoprotein cholesterol (LDL-C), atherogenic index (AI) and body weight gain as compared to other treatment groups. At the end of treatment period, rats fed with a HF diet supplemented with 5 % freeze-dried *G. changii* powder had significantly reduced plasma TC (–39.19 %), LDL-C (–36.36 %), and triglycerides (TG) content (– 25.45 %). Meanwhile, 10 % seaweed powder significantly lowered the plasma TC, LDL-C and TG content by –40.34, –35.95 and –30.91 % respectively, compared to the HF group. The AI of rats supplemented with 10 % seaweed powder was the lowest among the treatment groups and indicates a lowered risk for cardiovascular diseases. The plasma lipid peroxidation of the seaweed powder-fed groups was also significantly lower than the HF group, while the erythrocyte enzyme antioxidant activities of superoxide dismutase, catalase and glutathione peroxidase of the treatment groups were also improved. Diets supplemented with seaweed powder also decreased plasma aspartate aminotransferase and the alanine aminotransferase levels.