

Oxidative stress biomarkers in organs of hyperlipidaemic and natural rats fed tropical red seaweed, *Gracilaria changii*

Abstract

The aim of the study was to evaluate the effects of normal and high-cholesterol/fat diet supplemented with 5 and 10% freeze-dried red seaweed, *Gracilaria changii* powder on rat organs (liver, kidney and heart), lipid peroxidation and antioxidant enzyme activities. The results showed that feeding with atherogenic diet alone caused lipid peroxidation which eventually leads to oxidative stress of the rat's organs. Nevertheless, with 10 % *G. changii* supplementation, it significantly decreased the liver lipid peroxidation by 52.24 %, and the antioxidant enzyme activities were significantly increased by 52.09 to 94.42 %. Similarly, with *G. changii* supplementation, it significantly enhanced the kidney antioxidant enzyme activities. This suggests that *G. changii* suppress oxidative stress and protect the rats' organs. In conclusion, *G. changii* could be a promising functional food ingredient in the management of hyperlipidaemia.