

Evaluation the Protective Effect of *Gracilaria birdiae* at Liver and Kidney Injury Induced by Carbon Tetrachloride in Mice

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ABSTRACT

Introduction: Recent research involving seaweed have been developing, because seaweeds have beneficial health effects, since showed several properties, antioxidant, antimicrobial, antitumor and anticoagulants, besides they have excellent nutritional potential. **Objectives:** evaluate the protective effect *in vivo* (using biochemical and histological parameters) of seaweed *Gracilaria birdiae*, in mice submitted to the process of inflammation by toxic agent Carbon Tetrachloride (CCl₄). **Material and Methods:** 36 Albino mice (30-35 g) were randomly divided into six groups (control; CCl₄; GB; GB+CCl₄; vitamin E; vitamin E+CCl₄). The experiment occurred in 21 days. In the end, the animals were euthanized, and aliquots of blood were collected by cardiac puncture to evaluate the blood plasma levels of urea, creatinine, alanine aminotransferase (ALT) and aspartate aminotransferase (AST). The organs were weighed and fixed in buffered paraformaldehyde for subsequent histological analysis. The biological assay was developed in accordance with the ethical principles in animal experimentation, and the project was approved by the Ethics Committee on Animal Use of Universidade Federal do Rio Grande do Norte (UFRN – Protocol 059/14). **Results and Discussion:** The data of analysis to the biochemical parameters and organ weights showed no statistically significant difference ($p > 0.05$) compared to the control group. The histological analysis showed that the groups treated with CCl₄ obtained changes in tissue morphology, which are attenuated in the groups that were administered seaweed or vitamin E (positive control). **Conclusions:** The results suggest that the seaweed *Gracilaria birdiae* has protective activity in liver and kidney tissues of mice for injury caused by CCl₄ and not compromise biochemical parameters analyzed. It can be concluded that the studied seaweed has considerable protective activity *in vivo*.

PALAVRA-CHAVE: antioxidant, *in vivo*, protection.