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IN VIVO EVALUATION OF ANTIOXIDANT AND HEPATOPROTECTIVE ACTIVITY OF BOLDO AQUEOUS EXTRACT

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ABSTRACT

Introduction: Oxidative stress is a mediator of several pathological processes such as liver illnesses. The imbalance between the overproduction of reactive oxygen species and scavenging homeostasis triggers to overall cellular damage. Medicinal plants have become a significant source of constituent phytochemicals with antioxidant properties. Boldo (*Peumus boldus*) has alkaloids, flavonoids and essential oils in its composition and has been used in folk medicine to treat liver injuries. **Objective:** The aim of this work was to investigate the antioxidant and hepatoprotective activity of the aqueous extract of *Peumus boldus*, commonly known as boldo of Chile. **Methods:** The infusion was made by pouring 150 mL of boiling water into 2 g of dry plant material. The extract was characterized by the determination of the total polyphenols content. The antioxidant potential was measured by the DPPH method. To determine the hepatoprotective effect of the extract, male Wistar rats were divided into 4 groups (n = 8): animals that received water (negative control); animals treated with water and paracetamol (positive control); animals that received only the extract and animals treated with the extract and paracetamol. Hepatic injury was induced in rats with administration of paracetamol at a dose of 3g/kg body weight, 24 h before euthanasia. The boldo extract was administered daily to the animals by gavage (2 mL/kg of body weight) for 15 days. Blood samples collected by cardiac puncture were used to analyze biochemical parameters (ALT and AST). **Results:** The phenolic compounds present in the boldo leaf extract ($48 \pm 0.01 \mu\text{g EAG}/100\text{g extract}$) were able to eliminate an average of 70% of DPPH radicals. The group of rats in which paracetamol was

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administered had an increase of 8 and 17 times in the AST and ALT levels, respectively, indicative of liver damage. Treatment with boldo aqueous extract did not alter the levels of ALT and AST in normal rats or in rats with hepatic injuries. Conclusion: These results suggest that the boldo extract is able to protect the liver from oxidative damage that causes hepatic damage.

Keyword: Antioxidant activity; Boldo extract; hepatoprotective; Phytotherapeutic drugs.