Antioxidative and hepatoprotective effects of Antrodia camphorata extract

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摘要

Abstract

Antrodia camphorata (A. camphorata) is well-known in Taiwan as a traditional Chinese medicine. The purpose of this study was to evaluate the ability of A. camphorata extracts to protect against oxidative stress in vitro and against carbon tetrachloride (CCl4)-induced hepatic injury in vivo. An extract of A. camphorata inhibited nonenzymatic iron-induced lipid peroxidation in rat brain homogenates with an IC50 value about 3.1 mg/mL. It also scavenged the stable free radical 1,1-diphenyl-2-picrylhydrazyl (DPPH). The dose of the A. camphorata extract resulting in a decrease of 0.20 in the absorbance of DPPH was about 31 ± 0.7 μg/mL. Furthermore, an A. camphorata extract dose-dependently (250−1250 mg/kg) ameliorated the increase in plasma aspartate aminotransferase (GOT) and alanine aminotransferase (GPT) levels caused by chronic repeated CCl4 intoxication in mice. Moreover, A. camphorata extract significantly improved the CCl4-induced increase in hepatic glutathione peroxidase, reductase, and CCl4-induced decrease in superoxide dismutase activities. It also restored the decrement in the glutathione content and catalase activity of hepatic tissues in CCl4-intoxicated mice. Furthermore, it also dose-dependently inhibited the formation of lipid peroxidative products during CCl4 treatment. Histopathological changes of hepatic lesions induced by CCl4 were significantly ameliorated by treatment with an A. camphorata extract in a dose-dependent manner. These results suggest that A. camphorata extract exerts effective protection against chronic chemical-induced hepatic injury in vivo, by mediating antioxidative and free radical scavenging activities.