

Hepatoprotective Effects of *Arctium lappa* L. on Liver Injuries Induced by Chronic Ethanol Consumption and Potentiated by Carbon Tetrachloride

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摘要

Abstract

Arctium lappa Linne (burdock) is a perennial herb which is popularly cultivated as a vegetable. In order to evaluate its hepatoprotective effects, a group of rats ($n = 10$) was fed a liquid ethanol diet (4 g of absolute ethanol/ 80 ml of liquid basal diet) for 28 days and another group ($n = 10$) received a single intraperitoneal injection of 0.5 ml/kg carbon tetrachloride (CCl₄) in order to potentiate the liver damage on the 21st day (1 day before the beginning of *A. lappa* treatment). Control group rats were given a liquid basal diet which did not contain absolute ethanol. When 300 mg/kg *A. lappa* was administered orally 3 times per day in both the 1-day and 7-day treatment groups, some biochemical and histopathological parameters were significantly altered, both in the ethanol group and the groups receiving ethanol supplemented with CCl₄. *A. lappa* significantly improved various pathological and biochemical parameters which were worsened by ethanol plus CCl₄-induced liver damage, such as the ethanol plus CCl₄-induced decreases in total cytochrome P-450 content and NADPH-cytochrome c reductase activity, increases in serum triglyceride levels and lipid peroxidation (the deleterious peroxidative and toxic malondialdehyde metabolite may be produced in quantity) and elevation of serum transaminase levels. It could even restore the glutathione content and affect the histopathological lesions. These results tended to imply that the hepatotoxicity induced by ethanol and potentiated by CCl₄ could be alleviated with 1 and 7 days of *A. lappa* treatment. The hepatoprotective mechanism of *A. lappa* could be attributed, at least in part, to its antioxidative activity, which decreases the oxidative stress of hepatocytes, or to other unknown protective mechanism(s).