

Protective effect of *Acacia confusa* bark extract and its active compound gallic acid against carbon tetrachloride-induced chronic liver injury in rats.

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Abstract

Acacia confusa Merr. (Leguminosae), a species native to Taiwan, is widely distributed on the hills and lowlands of Taiwan, and has been traditionally used as a medicine. The hepatoprotective effects of *A. confusa* bark extract (ACBE) and its active constituent gallic acid were evaluated against carbon tetrachloride (CCI(4))-induced hepatotoxicity in rats. CCI(4)-induced hepatic pathological damage and significantly increased the levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT) and malondialdehyde (MDA) in plasma, and cytochrome P4502E1 (CYP2E1) protein expression in hepatic samples, and decreased the activities of superoxide dismutase (SOD), glutathione peroxidase (GPX) and catalase (CAT) in erythrocytes. Treatment with ACBE, gallic acid or silymarin could decrease significantly the AST, ALT, and MDA levels in plasma, and CYP2E1 expression in liver tissues, and increase the activities of SOD and GPX in erythrocyte when compared with CCI(4)-treated group. Liver histopathology also showed that ACBE, gallic acid or silymarin could significantly reduce the incidence of liver lesions induced by CCI(4). These results suggested that the ACBE and gallic acid exhibit potent hepatoprotection against CCI(4)-induced liver damages in rats, and the hepatoprotective effects of ACBE and gallic acid may be due to the modulation of antioxidant enzymes activities and inhibition of lipid peroxidation and CYP2E1 activation.