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**Title:** Antioxidant and Protective Effect of Ethyl Acetate Extract of *Podophyllum Hexandrum* Rhizome on Carbon Tetrachloride Induced Rat Liver Injury

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### Abstract

The antioxidant and hepatoprotective activities of ethyl acetate extract was carefully investigated by the methods of DPPH radical scavenging activity, Hydroxyl radical scavenging activity, Superoxide radical scavenging activity, Hydrogen peroxide radical scavenging activity and its Reducing power ability. All these *in vitro* antioxidant activities were concentration dependent which were compared with standard antioxidants such as BHT,  $\alpha$ -tocopherol. The hepatoprotective potential of *Podophyllum hexandrum* extract was also evaluated in male Wistar rats against carbon tetrachloride (CCl<sub>4</sub>)-induced liver damage. Pre-treated rats were given ethyl acetate extract at 20, 30 and 50 mg/kg dose prior to CCl<sub>4</sub> administration (1 ml/kg, 1:1 in olive oil). Rats pre-treated with *Podophyllum hexandrum* extract remarkably prevented the elevation of serum AST, ALT, LDH and liver lipid peroxides in CCl<sub>4</sub>-treated rats. Hepatic glutathione levels were significantly increased by the treatment with the extract in all the experimental groups. The extract at the tested doses also restored the levels of liver homogenate enzymes (glutathione peroxidase, glutathione reductase, superoxide dismutase and glutathione-S- transferase) significantly. This study suggests that ethyl acetate extract of *P. hexandrum* has a liver protective effect against CCl<sub>4</sub>-induced hepatotoxicity and possess *in vitro* antioxidant activities.

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