

# Hepatoprotective and Antioxidant Activities of the Aqueous Extract from the Rhizome of *Phragmites australis*

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The rhizome of *Phragmites australis* has long been used for the treatment of hepatitis in traditional Chinese medicine. In this study, the hepatoprotective and antioxidant activities of an aqueous extract from the rhizome of *P. australis* (AE-PA) were evaluated. The acute toxicity test in mice showed that AE-PA was nontoxic since a dose of 2000 mg/kg body weight (b.w.) did not cause toxic symptoms or mortality. The prolongation of hexobarbital-induced sleeping time by carbon tetrachloride (CCl<sub>4</sub>) administration to mice was significantly reduced after pretreatment with AE-PA at 500 mg/kg b.w., proving the protective effect of the extract on microsomal drug-metabolizing enzyme. The oral administration of AE-PA to rats for 5 days before CCl<sub>4</sub> intoxication caused a significant decrease in the CCl<sub>4</sub>-induced elevation of hepatic enzymes activities in serum, such as aspartate aminotransferase, alanine aminotransferase, and lactic acid dehydrogenase. This suggested that AE-PA had good hepatoprotective activity against CCl<sub>4</sub>-induced liver injury, which was confirmed by pathomorphological examination of the liver. Through evaluation of hydroxyl radical and superoxide anion radical scavenging activities, respectively, it was demonstrated that AE-PA had good antioxidant activity, which possibly contributed to its hepatoprotective activity. More research is needed to study the bio-active compounds in *P. australis* and to identify the potential hepatoprotective and antioxidant agents.

**Key words:** *Phragmites australis*, Hepatoprotective, Antioxidant