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School of Pharmacy and Pharmaceutical Sciences
Isfahan University of Medical Sciences

Protective effect of Date seed (*Phoenix dactylifera*) extract against carbon tetrachloride toxicity in freshly isolated rat hepatocytes

Y. Azadbakht[1,*], A. Siahpoosh[2], M. Rezaei[3], Z. Jafari farsani[4], A. Samimi[5]

[1]Medicinal Herbs and Natural Compounds Researches Center, Pharmacy School, JondiShapour University of Medical Sciences, Ahvaz, Iran
[2]Medicinal Herbs and Natural Compounds Researches Center, Pharmacognosy Department, Pharmacy School, JondiShapour University of Medical Sciences, Ahvaz, Iran
[3]Medicinal Herbs and Natural Compounds Researches Center, Pharmacology and Toxicology Department, Pharmacy School, JondiShapour University of Medical Sciences, Ahvaz, Iran
[4]Medicinal Herbs and Natural Compounds Researches Center, School of Nursing, JondiShapour University of Medical Sciences, Ahvaz, Iran
[5]Medicinal Herbs and Natural Compounds Researches Center, Veterinary School, Shaheed Chamran University, Ahvaz, Iran

Background and Aims: Liver is the largest gland in the body and plays an important role in normal function of the body. Liver diseases are the most common diseases in Iran and other countries, nearly3 to 5percent of the population of Iran suffer from it .Liver protective agents are under intensive investigations and among them are the compounds that have natural origin and rich in antioxidant capacity. In this study, protective effect of date (Phoenix dactylifera) seed extract on liver hepatocytes of rat has been evaluated. Previously, it was shown that this extract could have anti-inflammatory, anti-tumor and peptic ulcer protective effects.
Methods: Fresh hepatocytes were isolated by two step collagenase perfusion method and following stabilization in rotary, exposed to 0, 5, 50 and 100 mg/ml date seed extract. Carbon tetrachloride (10 mM/L) was added 45 minutes later to rotating flasks and remained for half an hour followed by viability determination. Also, AST, ALT and ALP enzymes were measured in supernatant subsequently.
Results: In groups received 0, 5, 50 and 100 mg/ml extract, AST was found7950, 6860, 1050 and 450 U/L consecutively. Similarly, for ALT, 2780, 1690, 330 and 230 U/L and for ALP 2150, 1990, 710 and 540 U/L was obtained. Also, viability determined as 19, 32, 68 and 73 percent.
Conclusions: Results showed that date seed extract in high doses (50 and 100 mg/ml) could protect hepatocytes against carbon tetrachloride toxicity apparently by means of its high antioxidant capacity and scavenging of ensued free radicals.

Keywords: Date seed extract; Hepatocyte; Rat; Antioxidant; Carbon tetrachloride