

论文

白藜芦醇对大鼠肾氧化损伤保护作用

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摘要:

**目的** 探讨白藜芦醇对高糖高脂饮食大鼠肾氧化损伤的保护作用。**方法** 大鼠分为正常对照组、高糖高脂组、白藜芦醇低、中、高剂量组,13周后处死大鼠,测定血糖血脂、肾组织氧化应激水平、抗氧化酶活性及肾脏过氧化物酶激活受体 $\alpha$ (PPAR $\alpha$ )、羟甲基戊二酰辅酶A合成酶(HMGCS2)mRNA表达水平。**结果** 高糖高脂饮食13周后,高糖高脂组大鼠体重为(453.00 $\pm$ 19.54)g,明显高于正常对照组(368.75 $\pm$ 25.24)g和高剂量白藜芦醇组(400.40 $\pm$ 30.39)g( $t=4.545$ 、 $2.991$ , $P<0.05$ );高糖高脂组大鼠肾脏总抗氧化能力(T-AOC)、超氧化物歧化酶(T-SOD)分别为(1.22 $\pm$ 0.34)、(2.69 $\pm$ 0.13)U/(mg.Pro),明显低于正常对照组的(0.27 $\pm$ 0.03)、(2.43 $\pm$ 0.07)U/(mg.pro)( $t=3.491$ , $P=0.003$ ;  $t=2.793$ , $P=0.011$ )。 **结论** 高糖高脂饮食大鼠肾内处于明显的氧化应激状态,白藜芦醇对高糖高脂饮食引起的氧化性肾损伤有保护作用。

**关键词:** 白藜芦醇 高糖高脂饮食 氧化损伤

Protective effects of resveratrol on renal oxidative injury in rats

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**Abstract:**

**Objective** To examine the protective role of resveratrol on lipid oxidation which may cause kidney damage in rats with high glucose and high-fat diet. **Methods** The rats were divided into normal diet control group, high glucose and high-fat diet group, low, moderate and high dose resveratrol groups. All rats were killed after 13 weeks. Serum glucose, total cholesterol, and triglyceride levels were determined. Total antioxidant capacity (T-AOC), total superoxide dismutase (T-SOD), glutathione peroxidase (GSH-Px) activity, and malondialdehyde (MDA) content were measured in renal tissue extracts and renal peroxisome proliferator-activated receptor  $\alpha$  (PPAR $\alpha$ ), mitochondrial 3-hydroxy-3-methylglutaryl-CoA synthase (HMGCS2) mRNA expression were determined. **Results** Body weight (453.00 $\pm$ 19.54 g), renal MDA (6.11 $\pm$ 1.42 nmol/mg·Pro) content increased significantly in high glucose and high-fat diet group compared with normal diet control group, while decreased in resveratrol co-treated groups compared with high glucose and high-fat diet group. The renal T-AOC (0.27 $\pm$ 0.03 U/mg·Pro), T-SOD (2.43 $\pm$ 0.07 U/mg·Pro) levels of high glucose and high-fat diet group were significantly lower than those of the normal diet control group. Compared with those of the high glucose and fat diet group, renal T-AOC, T-SOD, and GSH-Px levels decreased in resveratrol co-treated group. Compared with normal diet control group, lower renal PPAR $\alpha$  and HMGCS2 mRNA expression levels were observed in high glucose and fat diet rats ( $P=0.012$ ,  $0.045$ ), while enhanced expression of renal PPAR $\alpha$  and HMGCS2 mRNA were observed in the rats co-treated with resveratrol. **Conclusion** High glucose and high-fat diet can cause significant oxidative stress in rat kidney, which may be involved in the occurrence of renal damage. Resveratrol has protective effect on the high glucose and high-fat diet induced oxidative renal injury in rats.

**Keywords:** resveratrol high glucose and high-fat diet oxidative damage

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