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专题研究

四环素诱导Balb/c小鼠肝脏脂肪代谢相关基因表达谱的变化

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摘要 背景与目的： 利用小鼠毒理基因芯片观察四环素对Balb/c小鼠肝脏脂肪代谢相关基因表达的影响。 材料与方法： 设计200 mg/(kg·d)和50 mg/(kg·d)剂量条件下包含3个时相点的四环素致小鼠肝脏损伤动物模型，提取小鼠肝脏RNA样本，利用小鼠毒理基因芯片进行杂交实验。 结果： 综合各组基因表达谱分析发现与脂肪代谢相关的差异表达基因28个，涉及肝内脂肪合成、分解代谢、转运等多方面，对这些基因的功能和相互关系进行了初步分析和探讨。 结论： 四环素作用于Balb/c小鼠肝脏后引起脂肪代谢相关多个基因显著改变，为深入探讨四环素肝脏毒性分子机制提供了线索。

关键词 基因芯片； 四环素； 肝脏

Effects of Tetracycline on Expression Profiles of Genes Associated with Lipid Metabolism in Balb/c Mouse Liver

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Abstract BACKGROUND & AIM:To search for the differentially expressed genes related to lipid metabolism in the liver of Balb/c mouse treated by tetracycline hydrochloride using mouse toxicological microarray. MATERIAL AND METHODS: The mouse toxicological microarray was developed. The model of tetracycline hydrochloride damaging mouse liver ,which included two doses (200 mg/(kg·d) and 50 mg/(kg·d))and three time phases,was established.The total RNA of mouse liver was isolated for hybridization experiment of the microarray. RESULTS: 28 genes differentially expressed in all treated groups were found. These were involved in lipid synthesis，catabolisim and transport in the liver,preliminary analyses of these gene functions and their relationship were performed. CONCLUSION： Multiple genes were markedly changed in the liver of Balb/c mouse treated by tetracycline hydrochloride.This set the stage for further research on the molecular mechanisms of the hepatoxicity of tetracycline.

Keywords gene chip tetracycline liver

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