



## 柴胡皂苷的大鼠肝毒性机制与能量代谢异常的关系研究

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**中文摘要:**目的: 研究柴胡皂苷对大鼠肝线粒体功能、与能量损伤相关肝功和病理指标的影响, 探讨其致大鼠肝毒性损伤的能量机制。方法: 连续15 d给大鼠灌胃高、中、低不同剂量的柴胡皂苷醇洗脱物, 按柴胡皂苷计算剂量分别为300, 150, 50 mg·kg<sup>-1</sup>。检测血清部分肝功指标, 测定肝线粒体呼吸功能, ATP含量及ATP酶活性的变化; 计算心、肝、脾、肺、肾脏体比值和肝病理组织学检查。结果: 柴胡皂苷各剂量组大鼠肝线粒体呼吸控制率(PCR)、磷氧比值(P/O)、呼吸耗氧量、ATP含量和ATP酶活性均明显降低; 血清丙氨酸氨基转移酶(ALT)、天门冬氨酸氨基转移酶(AST)和白蛋白(ALB)水平升高; 肝脏质量和肝体比值增大; 病理学检查可见不同程度的肝组织损伤。上述变化随剂量的增加而逐渐加重, 与空白组比较有明显差异。结论: 柴胡皂苷在一定剂量下可通过抑制线粒体呼吸功能、影响肝能量代谢造成肝毒性损伤, 是否还有其他肝毒性机制有待进一步探讨。

**中文关键词:** 柴胡皂苷 肝毒性 线粒体 能量代谢

### Research on mechanism of energy metabolism disorders of rat's hepatotoxicity induced by saikosaponins

**Abstract:** Objective: To study the influence of saikosaponins on function of rats' liver mitochondria, its liver damage mechanism was discussed. Method: Administrating alcohol eluent of saikosaponins of different dose for 15 days to rats, and the high, middle and low lose-group are separately 300, 150, 50 mg·kg<sup>-1</sup> calculated by total saikosaponins. The liver index in serum, the respiratory function of liver mitochondria, the content of ATP and the activity of ATP enzyme were detected. The weight of heart, liver, spleen, lung, renal of rats were precisely weighed, and the ratio of organ to body were calculated. The histopathologic examination of hepatic tissue were examined. Result: Alcohol eluent of saikosaponins of different dose can induce apparent decrease of PCR, P/O value, respiratory oxygen consumption and the activity of ATP enzyme; the level of ALT, AST and ALB in serum increased; the liver weight and the ratio of liver to body increased, and the hepatic tissue damage is obvious in the histopathologic examination of hepatic tissue. The above-mentioned changes gradually aggravates with dose increasing, and it is obviously discrepancy compared with control group. Conclusion: Alcohol eluent of saikosaponins can induce liver damage by restraining the respiratory function of mitochondria and effecting liver's energy metabolism. Other hepatotoxicity mechanism still need to be discussed.

**keywords:** saikosaponins hepatotoxicity mitochondria energy metabolism

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