

论文

重复性饥饿再投喂对大鼠UCP-2、3表达影响

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摘要:

目的 探讨幼鼠和成年大鼠重复性饥饿再投喂饲喂方式处理后,解耦联蛋白(UCPs)mRNA表达变化。**方法** 设计重复性饥饿1 d/再投喂1 d,持续6周的饲喂方式处理幼鼠和成鼠,比较体重、Lee's指数,检测血糖、游离脂肪酸(FFA)和胆碱酯酶(CHE)含量,白色脂肪组织UCP 2 mRNA和肌肉组织UCP 3 mRNA表达水平。**结果** 饥饿再投喂组幼鼠和成年大鼠体重分别为(243.73±17.66)、(261.12±19.51)g,明显低于对照组幼鼠(375.36±21.12)g和成年大鼠(396±18.14)g($P<0.01$);与对照组比较,饥饿再投喂大鼠血清FFA升高($P<0.05$),成年大鼠血糖含量降低($P<0.05$);分别与幼鼠对照组与饥饿再投喂组大鼠比较,成鼠血清CHE含量明显升高($P<0.01$)。与对照组比较,饥饿再投喂组大鼠白色脂肪组织UCP 2 mRNA表达升高($P<0.05$);与幼鼠对照组比较,成年对照组大鼠白色脂肪组织UCP 2 mRNA表达降低($P<0.05$);与饥饿再投喂幼鼠比较,饥饿再投喂组成年大鼠白色脂肪组织UCP 2 mRNA表达升高($P<0.05$)。**结论** 重复性饥饿再投喂处理能使大鼠白色脂肪组织UCP 2 mRNA的表达水平升高,提高大鼠基础能量代谢率。

关键词: 饥饿再投喂 解耦联蛋白 脂肪酸 能量代谢

Effect of repeated fasting/refeeding on expression of UCP-2, 3 genes in rats

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Abstract:

Objective To investigate the changes of expression of uncoupling protein 2(UCP-2)mRNA and unconpling protein 3(UCP-3)mRNA in infant and adult rats treated with repeated fasting/refeeding.**Methods** A repeated fasting/refeeding of infant and adult rats model was designed and the rats were fed with a repeated cycle of 1day fasting and 1 day refeeding for 6 weeks.The body weight and Lee's index were measured.Glucose,free fatty acid(FFA)and cholinesterase(CHE)levels,and the expressions of UCP-2 mRNA and UCP-3 mRNA were detected.**Results** Compared to the control(375.36±21.12 g,396±18.14 g),the body weight of infant and adult rats in repeated fasting/refeeding group (243.73±17.66 g,261.12±19.51 g)decreased significantly and the serum glucose levels of adult rats decreased significantly($P<0.05$).Compared to the control,serum FFA level of fasting/refeeding rats increased significantly($P<0.05$).Compared to the infant rats,serum CHE level of adult rats increased significantly($P<0.01$).Compared to the control,the expression of UCP2 mRNA in white fat tissue(WAT)of infant and adult rats increased significantly($P<0.05$).Compared to the control infant rats,the expression of UCP-2 mRNA in WAT of adult control rats decreased significantly($P<0.05$). Compared to fasting/refeeding infant rats,the expression of UCP-2 mRNA in WAT of adult rats increased significantly ($P<0.05$).**Conclusion** The repeated fasting/refeeding can increase the expression of UCP2 mRNA in WAT and improve energy metabolism in rats.

Keywords: fasting/refeeding UCPs FFA energy metabolism

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