

论著

## 中链甘油三酯对小鼠胆固醇代谢和胆固醇7 $\alpha$ -羟化酶表达的影响

李燕, 马静, 韩平华, 凌文华

中山大学北校区公共卫生学院营养系, 广东 广州 510080

收稿日期 2004-6-21 修回日期 2004-9-29 网络版发布日期 2009-9-23 接受日期 2004-9-29

**摘要** 目的: 研究中链甘油三酯对小鼠胆固醇代谢的影响及可能的机制。方法: 分别用AIN-93G配方饲料(BC), 含1%胆固醇的AIN-93G配方饲料(Chol), 含1%胆固醇和14%富含豆蔻酸的长链甘油三酯(LCT)的AIN-93G配方饲料(Chol+LCT), 含1%胆固醇和14%的中链甘油三酯(MCT)的AIN-93G配方饲料(Chol+MCT)喂养C57小鼠6周, 每组15只。观察血清总胆固醇(TC)、肝脏胆固醇含量、机体总胆汁酸含量以及肝脏胆固醇7 $\alpha$ -羟化酶(CYP7A1)的表达。结果: Chol+MCT组小鼠血清TC低于(P<0.01)、肝脏胆固醇高于(P<0.01)、机体总胆汁酸含量低于(P<0.01)、CYP7A1表达低于(P<0.01) Chol组小鼠; Chol+MCT组小鼠血清TC低于(P<0.01)、机体总胆汁酸含量以及CYP7A1表达高于(P<0.01) Chol+LCT组小鼠、肝脏胆固醇含量不变。结论: MCT对机体胆固醇水平的影响与CYP7A1表达有关。

**关键词** [甘油三酯类](#); [胆固醇](#); [胆汁酸类和盐类](#); [胆固醇7 \$\alpha\$ -羟化酶](#)

分类号 [R151.2](#)

## Effect of MCT on CYP7A1 gene expression and cholesterol metabolism in mice

LI Yan, MA Jing, HAN Ping-hua, LING Wen-hua

Faculty of Nutrition, Department of Public Health, Sun Yet-sen University, Guangzhou 510080, China

### Abstract

<FONT face=Verdana>AIM: To explore the effect and the corresponding mechanism of medium chain triglyceride (MCT) on CYP7A1 gene expression in mice. METHODS: C57BL/6J mice (15/group) were respectively received mash as AIN-93G formula (basic control BC), or 1% cholesterol supplemented AIN-93G formula (Chol), or 1% cholesterol and 14% long chain triglyceride (LCT) rich in myristic acid supplemented AIN-93G formula (Chol+LCT), or 1% cholesterol and 14% MCT (caprylic acid/capric acid: 3/1) supplemented AIN-93G formula (Chol+MCT) for 6 weeks. The change of serum total cholesterol (TC), the content of cholesterol in liver, the bile acid pool of mice and the expression of cholesterol 7-hydroxylase (CYP7A 1) gene were investigated. RESULTS: Compared to mice fed Chol diet, the mice fed Chol+MCT diet had the lower serum TC (P<0.01), higher liver cholesterol (P<0.01), smaller bile acid pool (P<0.01) and lower CYP7A1 gene expression (P<0.01). Compared to mice fed Chol+LCT diet, the mice of Chol+MCT group had lower serum TC (P<0.01), higher bile acid pool (P<0.01) and higher CYP7A1 gene expression (P<0.01). The levels of liver cholesterol were almost the same. CONCLUSION: The results of this study demonstrate that the effect of MCT on cholesterol level is related to CYP7A1 gene expression.</FONT>

**Key words** [Triglycerides](#) [Cholesterol](#) [Bile acids and salts](#) [Cholesterol 7 alpha-hydroxylase](#)

DOI: 1000-4718

通讯作者 李燕 [wenling@gzsums.edu.cn](mailto:wenling@gzsums.edu.cn)

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(3174KB\)](#)
- ▶ [HTML全文\(0KB\)](#)
- ▶ [参考文献](#)

#### 服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

#### 相关信息

- ▶ [本刊中 包含“甘油三酯类; 胆固醇; 胆汁酸类和盐类; 胆固醇7 \$\alpha\$ -羟化酶” 的相关文章](#)
- ▶ [本文作者相关文章](#)

- [李燕](#)
- [马静](#)
- [韩平华](#)
- [凌文华](#)