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云南农业大学学报(自然科学) » 2011, Vol. 5 » Issue (3) :317-323 DOI:

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## 乌金猪与长白猪肝脏脂肪代谢相关基因mRNA表达水平的比较研究

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Comparative Studies on Level mRNA Expression Profile of Lipid Metabolism Related Genes from Wujin and Landrace Pigs

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摘要

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**摘要** 为探讨不同品种猪体内脂肪代谢的差异, 本文选用云南本土的脂肪型猪种乌金猪与外源性的瘦肉型猪种长白猪为研究对象, 通过实时荧光定量PCR比较研究了9个脂肪代谢相关基因mRNA在二者之间肝脏表达的差异, 结果显示: 乌金猪肝脏组织脂肪酸合成酶(FAS)基因的mRNA表达水平极显著高于长白猪( $P < 0.01$ ), 乙酰辅酶A羧化酶(ACC)、固醇元件结合蛋白(SREBP)、苹果酸酶(ME)和载脂蛋白B(ApoB)基因的mRNA表达水平显著高于长白猪( $P < 0.05$ ), 肉碱脂酰转移酶-1(CPT1)基因的mRNA表达水平极显著低于长白猪( $P < 0.01$ ), 酰基辅酶A氧化酶(ACOX)基因的mRNA表达水平显著低于长白猪( $P < 0.05$ ), 二酰基甘油酰基转移酶1(DGAT1)和过氧化物酶体增殖物激活型受体 $\alpha$ (PPAR $\alpha$ )基因的mRNA表达水平与长白猪无显著差异( $P > 0.05$ )。本研究结果表明, 乌金猪肝脏脂肪合成和脂肪酸转运相关基因的表达水平高于长白猪, 而脂肪分解相关基因的表达水平低于长白猪, 乌金猪肝脏的脂肪合成能力较长白猪强。

**关键词:** 脂类代谢 基因表达 肝脏 猪

**Abstract:** Liver mRNA expression level of nine lipid metabolism related genes from Wujin and landrace pigs was investigated and compared for providing theoretical basis to further study the mechanism of lipid metabolism in different breeds. The results revealed that the mRNA expressions of fatty acid synthase (FAS), ACC, SREBP and ME genes in liver of Wujin pigs were dramatically higher than those of landrace pigs ( $P < 0.01$  or  $P < 0.05$ ), the expressions of CPT1 and ACOX genes in liver of Wujin pigs were lower than landrace pigs ( $P < 0.01$  or  $P < 0.05$ ), and Wujin pigs expressed higher level of ApoB gene in liver ( $P < 0.05$ ). However, the expressions of DGAT1 and PPAR $\alpha$  genes were no significantly different in liver of this two breeds ( $P > 0.05$ ). These results suggested that the expression of genes related to fat synthesis and fatty acids transportation was higher and that of stearylolysis genes was lower in liver of Wujin pigs, which led to the higher capacity of fat synthesis in liver tissue.

**Keywords:** lipid metabolism genes expression liver pigs

Fund:

“973”前期研究专项(2007CB116201);云南省自然科学基金重点项目(2005C0008Z)。

引用本文:

韩茜, 赵素梅, 黄英, 张永云, 李卫真, 高士争\*\* . 乌金猪与长白猪肝脏脂肪代谢相关基因mRNA表达水平的比较研究[J] 云南农业大学学报(自然科学), 2011, V5(3): 317-323

HAN Qian, ZHAO Su-mei, HUANG Ying, ZHANG Yong-yun, LI Wei-zhen, GAO Shi-zheng. Comparative Studies on Level mRNA Expression Profile of Lipid Metabolism Related Genes from Wujin and Landrace Pigs[J] Journal of Yunnan Agricultural University, 2011, V5(3): 317-323

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