

论文 民猪细胞色素C氧化酶 I 基因的克隆、多态性检测及冷诱导研究

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摘要:

采用克隆测序和PCR-SSCP方法对民猪COX I 基因序列及多态性进行了检测与分析, 采用 实时荧光定量PCR法对同一饲养水平下经冷诱导处理的民猪和长白猪肌肉、肝脏组织中COX I 基因的表达变化进行分析。结果表明: 民猪的COX I 基因序列与其他猪种相比, 存在18个核苷酸突变, 导致5个氨基酸发生变化; C260T、G275A和C1253T位点民猪以B等位基因占优势, 大白猪、长白猪、北京黑猪、野猪则是A等位基因占优势; 冷诱导后低温组民猪COX I 基因的表达量与常温组民猪和低温组长白猪相比, 均显著下降(P<0.05)。据此推测冷诱导 可导致COX I 基因表达量降低从而产生更多的ATP为机体提供能量抵御寒冷, COX I 基因可能是一个与猪的抗寒性显著相关的候选基因。

关键词: 民猪 细胞色素C氧化酶 冷诱导 多态性分析

Study on Cloning and Polymorphism Analysis of COX I Gene in Min Pig During Cold Induction

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Abstract:

In this research, we analyzed the sequences of COX I gene in min pig by cloning and PCR-SSCP. With the method of fluorescence quantitative PCR, we analyzed the expression differences of COX I gene in muscles and liver between min pig and Landrace with the same feeding during cold induction. The results showed that, compared to other pigs, there were 18 nucleotide mutations in min pig which led to the changes of 5 amino acids. At C260T, G275A and C1253T site, allele B predominated in min pig and allele A predominated in large white, Landrace, Beijing black pig and wild boar. Compared to min pig during normal temperature and Landrace during cold induction, the expressions of COX I gene in min pig during cold induction were significantly lower (P<0.05). We inferred that, during cold induction the expressions of COX I gene would be lower in order to provide the energy for individuals, and COX I gene might be one of the candidate genes associated with cold resistance.

Keywords: min pig COX I cold induction polymorphism analysis

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