

畜牧兽医科学

五种牛THRSP基因部分第一外显子序列PCR-SSCP多态性研究

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摘要:

摘要: THRSP基因是调节动物脂肪生成的重要基因。本试验利用PCR—SSCP和DNA测序方法对秦川牛(QC)、夏南牛(XC)、南阳牛(NC)、郟县红牛(JRC)、鲁西牛(LC)共644头牛的THRSP基因部分第一外显子序列进行遗传多样性分析。结果发现存在两个突变位点: 40bpC/T和78bpA/G; 四种基因型: AA, AB, BB, AC; 五种牛A, B, C基因的频率分布一致。从位点间杂合度来看: QC > XC > LC > NC > JRC; 从位点间多态信息含量看: QC属于高度多态(PIC > 0.5), XC, LC, NC, JRC属于中度多态(0.25 < PIC < 0.5)。40bpC/T突变导致THRSP基因第3个氨基酸发生错义突变, 由缬氨酸(GTG)→丙氨酸(GCG); 78bp处的A/G突变引起THRSP基因第16个氨基酸发生错义突变, 由缬氨酸(GTC)→异亮氨酸(ATC)。

关键词: THRSP基因 PCR-SSCP; 黄牛; 分子标记

Study on PCR-SSCP Polymorphisms of THRSP Gene exon1 in 5 cattle

Abstract:

Abstract: THRSP gene is a important gene which involved in the regulation of animal lipogenesis. In this research, PCR-SSCP and DNA sequencing were used to analysis the Polymorphisms of THRSP gene part exon1 in 644 cattle which comes from Qinchuan cattle (QC), Xianan cattle (XC), Nanyang cattle (NC), Jiaxian Rec cattle (JRC), Luxi cattle (LC). It was detected two mutations that is 40bpC/T and 78bpA/G and four genotype were fouded which is AA, AB, BB, AC. The allele frequencies is likely in five cattle breeds. In He, QC > XC > LC > NC > JRC; in PIC, QC belonged to high polymorphisms (PIC > 0.5), XC, LC, NC, JRC belonged to moderate polymorphisms (0.25 < PIC < 0.5). The 40bp C/T mutation leads to a missense mutation from Val(GTG)→Ala(GCG), The 78bp A/G mutation leads to a missense mutation from Val(GTC)→Ile(ATC).

Keywords: THRSP gene PCR-SSCP; cattle; molecular marker

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