

研究报告

南阳牛DGAT2基因PCR-RFLP多态性及其与生长性状相关性研究

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摘要

以131头纯种南阳牛为研究材料, 利用PCR-RFLPs对二酰甘油酰基转移酶2 (DGAT2) 基因的第6内含子和第7内含子的多态性及其与生长发育的相关性进行了分析。结果表明: 南阳牛在该位点分别检测到两种等位基因A/B和N/M, 频率分别为0.875/0.125和0.971/0.029。A和N等位基因是群体中的优势等位基因。该基因内含子6对南阳牛6月龄的体高、2岁体重、6月龄到两岁的胸围和体斜长都有显著的影响, 内含子6的AA基因型的6月龄的体高比杂合型高3.8%, 两岁体重高3.9%, 6月龄到两岁的胸围分别高3.8%、3.4%、3.7%、4.3%; 6月龄到两岁的体斜长分别高3.8%、3.6%、3.8%、3.1%。内含子7对18月龄和两岁的坐骨端宽有极显著的影响 ($P < 0.01$); 对两岁的胸围有显著的影响 ($P < 0.05$)。

关键词 [DGAT2](#) [南阳牛](#) [PCR-RFLP](#) [生长性状](#)

分类号

Polymorphisms of DGAT2 gene and its associations with several growth traits in Nanyang cattle

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Abstract

<P>The associations between SNPs in intron 6 and intron 7 of the bovine diacylglycerol acyltransferase (DGAT2) gene and growth traits in purebred Nanyang cattle (n=131) were reported in this study. Alleles detected in intron 6 were allele A and B with frequencies of 0.875 and 0.125, respectively; alleles detected in intron 7 were allele N and M with frequencies of 0.968 and 0.032, respectively. The animals with genotype AA in intron 6 showed 3.8% increases in body height ($P < 0.01$), 3.9% increases in body weight ($P < 0.05$), 3.8% ($P < 0.05$), 3.6% ($P < 0.05$), 3.8% ($P < 0.01$) and 3.1% ($P < 0.01$) increase in body length at age six-month to two-year compared with genotype AB, respectively. They also showed 3.8% ($P < 0.05$), 3.4% ($P < 0.01$), 3.7% ($P < 0.01$) and 4.3% ($P < 0.01$) increases in heart girth at age six-month to two-year respectively. Animals with the NM genotype show significantly higher average heart girth at age two years ($P < 0.05$), and Hucklebone width ($P < 0.01$) at age eighteen-month ($P < 0.01$) and two-year ($P < 0.01$) compared with animals with the genotype NN, respectively.</P>

Key words [DGAT2](#) [Nanyang cattle](#) [PCR-RFLP](#) [growth related traits](#)

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