

动物遗传学

## 7个微卫星座位与北京荷斯坦母牛体细胞评分关系的研究

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**摘要** 选择与体细胞评分紧密连锁的7个微卫星座位BM1818、BM1258、BM1443、BM1905、BM302、BM4505和CYP21, 用非变性聚丙烯酰胺凝胶电泳分析其在240头北京荷斯坦母牛中的遗传变异。计算了7个微卫星座位的等位基因频率、杂合度、多态信息含量和有效等位基因数, 并利用最小二乘法拟合线性模型初步探索了这7个微卫星座位与北京荷斯坦母牛体细胞评分的关系。结果表明: 微卫星BM1818座位284 bp/284 bp、BM1258座位106 bp/92 bp、BM1443座位166 bp/160 bp、BM1905座位187 bp/187 bp、BM302座位142 bp/140 bp、BM4505座位240 bp/236 bp和CYP21座位215 bp/198 bp所对应的体细胞评分最小二乘平均值较低, 对乳房炎抗性而言它们是各自座位上的最有利基因型; 微卫星BM1818座位286 bp/286 bp、BM1258座位102 bp/102 bp、BM1443座位170 bp/160 bp、BM1905座位197 bp/195 bp、BM302座位154 bp/145 bp、BM4505座位240 bp/238 bp和CYP21座位204 bp/192 bp所对应的体细胞评分最小二乘平均值较高, 对乳房炎抗性而言它们是各自座位上的最不利基因型。

**关键词** [荷斯坦母牛](#) [体细胞评分](#) [微卫星座位](#) [遗传多态性](#)

分类号

## Study on Relationships Between Seven Microsatellite Loci and Somatic Cell Score in Beijing Holstein Cows

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### Abstract

Genetic variation of seven microsatellite loci BM1818, BM1258, BM1443, BM1905, BM302, BM4505 and CYP21 which were closely linked to somatic cell score (SCS) was analyzed in 240 Beijing Holstein cows with non-denaturing polyacrylamide gel electrophoresis. Allele frequencies, heterozygosity, polymorphic information content, the effective number of alleles of seven microsatellite loci were calculated. Relationships between seven microsatellite loci and somatic cell score in Beijing Holstein cows were primarily analyzed by least squares linear model. Least squares means of SCS for BM1818 (284 bp/284 bp), BM1258 (106 bp/92 bp), BM1443 (166 bp/160 bp), BM1905 (187 bp/187 bp), BM302 (142 bp/140 bp), BM4505 (240 bp/236 bp) and CYP21 (215 bp/198 bp) were lower, and these genotypes were the most favorable genotypes in respective locus for mastitis resistance. Least squares means of SCS for BM1818 (286 bp/286 bp), BM1258 (102 bp/102 bp), BM1443 (170 bp/160 bp), BM1905 (197 bp/195 bp), BM302 (154 bp/145 bp), BM4505 (240 bp/238 bp) and CYP21 (204 bp/192 bp) were higher, and these genotypes were the most unfavorable genotypes in respective locus for mastitis resistance. The information found in the present study is very important for improving mastitis resistance in dairy cattle by marker assisted selection. <br>

**Key words** [Holstein cow](#) [somatic cell score](#) [microsatellite locus](#) [genetic polymorphism](#)

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