

研究论文

# 草鱼连续两代的雌核发育群体及湘江流域群体基因组DNA的微卫星比较分析

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## 摘要

对湘江流域草鱼群体, 一代及连续两代极体型人工诱导雌核发育草鱼群体基因组DNA的微卫星引物统计分析结果表明: 湘江流域草鱼群体存在一定程度的遗传多态性; 大多数被检测的微卫星位点上存在两个以上的等位基因, 但遗传多样性程度较低。一代人工诱导雌核发育草鱼群体中个体的基因位点已基本纯合, 但就整个群体而言, 个体之间的基因型还不完全一致, 表现出一定的多态性。连续两代人工诱导雌核发育草鱼群体中不仅所检测个体的基因位点已完全纯合, 并且各个体的基因型也完全相同。这些观察结果说明所检测的两代人工诱导雌核发育草鱼群体是纯合的, 经连续两代人工诱导雌核发育可能建立起草鱼纯系。该实验结果还发现不仅草鱼的微卫星位点上存在等位基因的多态性, 而且微卫星位点本身也存在多态性; 在人工诱导草鱼雌核发育的过程中不仅存在微卫星等位基因快速丢失的现象, 而且也存在微卫星位点丢失的现象。因此, 加强对自然水体中草鱼种质资源多样性的保护和利用各种现代生物学技术纯化、筛选和组合优良性状基因, 是草鱼遗传育种中同样重要和不可或缺的两个方面。

关键词 [草鱼](#); [雌核发育](#); [基因组](#); [微卫星位点](#)

分类号

## Comparative Microsatellite Analysis of Grass Carp Genomes of Two Gynogenetic Groups and the Xiangjiang River Group

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### Abstract

<P>The genomes of three groups of grass carp, namely the Xiangjiang River grass carp group (Xiangjiang group), a one-generation artificially induced meio-gynogenetic grass carp group (meio-gynogenetic-1 group), and a two-generation artificially induced meio-gynogenetic grass carp group (meio-gynogenetic-2 group), were comparatively analyzed with microsatellite markers. Genetic polymorphism had been observed in the Xiangjiang group and most of the examined loci had more than two alleles. But the degree of genetic diversity was not very high. Although all the examined genetic loci in the analyzed individuals were in homozygous state, the genotypes of different individuals of the group were not identical in the meio-gynogenetic-1 group. In the meio-gynogenetic-2 group, not only the examined genetic loci of each individual were homozygous but also the genotypes of all the analyzed individuals of the group were the same. These results suggested that the examined meio-gynogenetic-2 group is a homozygous group and homozygous clone could be produced by continuous artificial induction of gynogenesis for two generations. It was found that the polymorphism existed not only at the allele level but also at the locus level; many alleles of the microsatellite loci and some of the microsatellite loci had been lost during the process of artificial gynogenesis. Therefore, both protection of the diversity of natural grass carp resource and selection of homozygous traits with desired economic genotypes are very important aspects for grass carp breeding.</P>

Key words [grass carp](#) [gynogenesis](#) [genome](#) [microsatellite locus](#)

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