

研究报告

9种石斑鱼遗传多样性和系统发生关系的微卫星分析

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摘要

利用实验室克隆的13个青石斑鱼微卫星分子标记, 对中国南海海域9种石斑鱼(青石斑鱼、蜂巢石斑鱼、鲑点石斑鱼、黑边石斑鱼、鞍带石斑鱼、赤点石斑鱼、七带石斑鱼、斜带石斑鱼和棕点石斑鱼)进行了遗传多样性和系统发生关系的分析。研究结果显示, 13个微卫星标记共检测到了84个等位基因, 9种石斑鱼中的平均等位基因数、平均多态信息含量(PIC)、平均观测杂合度(Ho)、平均期望杂合度(He)和平均Hardy-Weinberg遗传偏离指数(D)分别在2.69~5.38、0.1976~0.4267、0.4615~0.6239、0.3510~0.4754和0.1097~0.2836之间变动, 说明9种石斑鱼的遗传多样性都处于中等水平。用NJ法进行聚类分析的结果将9种石斑鱼分为3个支系: 斜带石斑鱼、棕点石斑鱼和鞍带石斑鱼为第1支; 青石斑鱼、赤点石斑鱼和七带石斑鱼为第2支系; 蜂巢石斑鱼、黑边石斑鱼和鲑点石斑鱼为第3支系, 该支系与第2支系的关系较近。本研究支持将宽额鲈(鞍带石斑鱼)归入石斑鱼属。

关键词 [石斑鱼](#) [微卫星标记](#) [遗传多样性](#) [系统发生关系](#)

分类号

Microsatellite analysis of genetic diversity and phylogenetic relationship of nine species of grouper in genus *Epinephelus*

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Abstract

<P>Thirteen microsatellite markers of *Epinephelus awoara* previously discovered by our lab were selected to analyze the genetic diversity and phylogenetic relationship of nine species of grouper (*E. awoara*, *E. merra*, *E. fario*, *E. fasciatus*, *E. lanceolatus*, *E. akaara*, *E. septemfasciatus*, *E. coioides* and *E. fuscoguttatus*) from South China Sea. The results showed that the number of total alleles of these 13 microsatellite loci was 84 in these fishes, the mean number of alleles ranged from 2.69 to 5.38, mean polymorphism information content (PIC) ranged from 0.1976 to 0.4267, mean observed heterozygosity (Ho) from 0.4615 to 0.6239, mean expected heterozygosity (He) from 0.3510 to 0.4754 and mean Hardy-Weinberg departure value (D) from 0.1097 to 0.2836, respectively. All of these indicated that genetic diversity of the nine species of grouper was at a medium level. Two NJ dendrograms showed that *E. coioides*, *E. fuscoguttatus* and *E. lanceolatus* were grouped together, while *E. awoara*, *E. akaara* and *E. septemfasciatus* were in a second group, and *E. merra*, *E. fasciatus* and *E. fario* were in a third group which had a relatively closed relationship with the second group. The dendrograms could also support a conclusion that *Promicrops lanceolatus* (*E. lanceolatus*) should be included in genus *Epinephelus*.</P>

Key words [Epinephelus](#) [microsatellite markers](#) [genetic diversity](#) [phylogenetic relationship](#)

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