

研究简报

短沟对虾两个野生群体遗传多样性的RAPD分析

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摘要 利用RAPD标记技术检测了厦门和汕头沿海2个短沟对虾群体基因组DNA的多态性,并对其进行遗传多样性进行了分析。从40条随机引物中筛选出13个10bp引物,共扩增出65条清晰可重复的DNA片段,片段长度为100~200 bp,在2个群体间没有检测到特异的片段。厦门和汕头群体的多态片段比例分别为87.69%和89.23%,杂合度分别为0.212和0.218,遗传多样性指数分别为0.2847和0.2913,两群体间的遗传距离为0.018, FST值为0.004。可见两野生群体种质资源仍然维持在良好水平,遗传分化程度很低,可能是同一种群,具有进一步开发的潜力。

关键词 [短沟对虾](#); [RAPD](#); [遗传多样性](#)

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Genetic diversity of two wild populations of *Penaeus semisulcatus* revealed by RAPD technique

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Abstract The green tiger prawn, *Penaeus semisulcatus* is one of the biggest penaeid prawns and widely distributed in tropical and subtropical regions of the Indian Ocean and the West Pacific Ocean. The important economic shrimp species in the north of the South China Sea are *Penaeus semisulcatus*, *Penaeus monodon*, *Marsupenaeus japonicus* and *Fenneropenaeus penicillatus*. Although the disease-resistance of *Penaeus semisulcatus* is more effective than that of *Penaeus monodon*, *Litopenaeus vannamei* and *Fenneropenaeus chinensis*, the culturing technique in *Penaeus semisulcatus* is not as success as that in *Penaeus monodon* and *Fenneropenaeus penicillatus*. It is for this reason that its culturing production could be ignored and the market product of this species in China mainly come from the wild catch. In recent years the genetic diversity of this species has been threatened by overfishing, environmental stress and habitat destruction. This study reports the genetic diversity and genetic differentiation of two wild stocks of *Penaeus semisulcatus* collected from Xiamen and Shantou coastal waters using RAPD method. Amplification with 13 random primers generated 65 reproducible fragments ranging from 200 to 2200bp. No specific fragments were detected between these two stocks, and the mean proportions of polymorphic amplified bands of Xiamen and Shantou population were 87.69 % and 89.23%, respectively. The mean heterozygosity of Xiamen stock and Shantou stock were 0.218 and 0.212, and the genetic diversity index were 0.2847 and 0.2913, respectively. The genetic distance was 0.0184 and FST was 0.004. All these results reveal that the germplasm resource of Xiamen and Shantou stocks is in good condition with higher genetic diversity and low genetic differentiation, and they may belong to one population and have a good exploitation potential.

Key words [Penaeus semisulcatus](#) _ [RAPD](#) _ [genetic diversity](#)

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