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研究报告

网箱养殖青石斑鱼*Epinephelus awoara*鳃及体表粘附菌群的PCR-DGGE比较分析

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摘要：

采用免培养的16S rDNA梯度凝胶电泳技术（denaturing gradient gel electrophoresis,DGGE）对海水网箱养殖青石斑鱼Epinephelus awoara鳃和体表粘附菌群结构进行了比较分析。结果表明青石斑鱼鳃粘附菌群结构相对简单,存在绝对优势种群,体表粘附菌群结构较为复杂,无绝对优势种群,聚类分析表明青石斑鱼鳃与体表粘附菌群结构存在较大差异性（相似度52%）,而个体间鳃或体表的粘附菌群结构相似性较好。测序结果表明青石斑鱼鳃与体表粘附菌群以未培养菌为主,鳃的绝对优势菌为Panntoeasp.,体表相对优势菌为Meio-thermussp.、UnculturedAcinetobactersp.、Wautersiella falsenii与未培养菌,提示在生产实践中采用复合菌制剂似乎更为可行。PCR-DGGE技术能区别青石斑鱼鳃与体表粘附菌群的多样性,在可定植益生菌筛选上具指导意义。

关键词： 青石斑鱼 DGGE 粘附菌群 指纹图谱

The Comparative Analysis of the Attached Bacterial Flora in the Gill and |Body Surface of Epinephelus awoara in Cages by PCR-DGGE

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Abstract:

Comparative analysis of the attached bacterial flora in the gill and body surface of Epinephelus awoara cultured in cages over sea was conducted by 16S rDNA and denaturing gradient gel electrophoresis （DGGE）. The results showed that the structure of those of the attached bacterial flora in the gill was relatively simple with absolute predominant bacterial species, and the structure in the body surface was relatively complicate without absolute predominant species. The cluster analysis showed that bigger difference （52% similarity） existed between the structure of the attached bacterial flora in the gill and body surface. However, higher simmilarity was found between different individual samples. The sequences show the attached bacterial flora in the gill and body surface were dominated by uncultured bacteria, and the absolute predominant bacterium in the gill was Pantoea sp. and the predominant bacteria in the body surface were Meiothermus sp. , uncultured Acinetobacter sp. , WautersieUa falsenii and another uncultured bacterium, which indicated that the combined prebiotics might be practical in production. The present study validated that the technique of PCR-DGGE could differentiate the variety of the attached bacterial flora in the gill and body surface in Epinephelus awoara, and could help to screen the planting-prebiotics in marine finfish culture.

Keywords: Epinephelus awoara DGGE attached bacterial flora fingerprint

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