

# 微生物学报

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### 新疆特殊生境岩石内生细菌末端限制性片段长度多态性技术分析

### Terminal restriction fragment length polymorphism analysis of endolithic bacteria community at special habitats in Xinjiang

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中文摘要:

摘要: 【目的】了解新疆特殊生境不同类型岩石内生细菌的组成及多样性。【方法】采用末端限制性片段长度多态性技术(Terminal Restriction Fragment Length Polymorphism, T-RFLP), 分析新疆乌苏花岗岩(1号样)、一号冰川和木垒变质岩(2, 3号样)、裕民和托克逊岩石漆(4, 5号样)内生细菌群落。【结果】样品间多样性指数变化不大; 聚类分析表明岩石类型相同, 其相似性较高, 2号样和3号样聚为一支并与1号样再聚为一支, 4号样与5号样聚为一支; 各样品共有种群为厚壁菌门(Firmicutes)、放线菌门(Actinobacteria)、变形菌门(Proteobacteria)和拟杆菌门(Bacteroidetes), 1号样存在酸杆菌门(Acidobacteria), 2号样存在浮霉菌门(Planctomycetes); 除5号样优势类群为放线菌门(29.3%), 其它4个样品均为变形菌门, 只是所占比例略有不同。【结论】生境不同的同类型岩石的内生细菌群落组成存在差异, 各类岩石中可能存在大量未知细菌新种。

英文摘要:

Abstract: [Objective] In order to investigate the composition and diversity of endolithic bacteria at special habitats in Xinjiang. [Methods] Five rock samples were collected, including Wusu's granite (sample 1), Glacier No.1, and Mulei's metamorphic rock (sample 2, sample 3), umin and Tokesun's Rock varnish (sample 4, sample 5). Endolithic bacterial community composition and diversity were analyzed by the method of Terminal Restriction Fragment Length Polymorphism. [Results] Differences in diversity indexes among samples were not apparent. Clustering analysis suggested that similarity coefficient was higher in same rock type, sample 2 and sample 3 were grouped together, then sample 1 clustered with them, and sample 4 and sample 5 were classified together. All samples harbored these phyla such as Firmicutes, Actinobacteria, Proteobacteria and Bacteroidetes. Acidobacteria and Planctomycetes existed in sample 1 and sample 2, respectively; Sample 5 was dominated by Actinobacteria, while other samples were dominated by Proteobacteria. [Conclusion] The endolithic bacterial composition of same rock type collected at various habitats was different. Meanwhile, a diversity of novel species and lineages maybe existed in rocks.

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