



华东师范大学在校生皮肤上葡萄球菌类型及其抗药性分析

蒋德明, 马海龙, 古丽斯坦·努尔艾合麦提, 买尔丹·帕力合提

生命科学学院 华东师范大学, 上海 200062

Species distribution and antibiotic susceptibility of Staphylococci isolated from the healthy human skins of East China Normal University students

JIAN G De-ming, MA Hai-long, GULI SITAN Nueraihemaiti, MAI ERDAN Paliheti

School of Life Sciences, East China Normal University, Shanghai 200062, China

- 摘要
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- 相关文章

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摘要 实验采集了华东师范大学在校学生皮肤表面的细菌样品, 通过Baird Parker培养基选择性分离葡萄球菌属菌株. 对分离到的菌株进行染色体DNA的提取, 并扩增16S rRNA基因; 通过16S rRNA基因序列分析菌株类型及菌株之间的系统发育关系; 最后利用纸片琼脂扩散法(K-B法)检测葡萄球菌菌株对10种常见的抗生素敏感性并进行分析. 结果分离得到了共31株葡萄球菌菌株, 然后对各菌株的16S rRNA基因序列进行系统发育关系分析, 将其分为6个不同的葡萄球菌种. 通过对抗生素敏感性分析显示, 31株菌中对10种抗生素检测没有完全敏感的菌株, 其中氨苄青霉素、阿莫西林和恩诺沙星3种抗生素抗菌效果都较低, 抗性率分别为91%, 91%和72%; 阿米卡星的抗葡萄球菌效果最好, 在31株菌株中只有3株菌株对阿米卡星具有抗性. 上述结果显示, 不管是维族人群还是汉族人群, 皮肤表面都存在大量葡萄球菌, 而维族人群中存在的数量高于汉族人群, 但在菌株类型上并没有显著差异. 存在于健康人体表面的葡萄球菌对常见10种抗生素具有较高的抗性, 阿米卡星对葡萄球菌的敏感性最好.

关键词: 皮肤微环境 葡萄球菌 16S rRNA基因 系统发育关系 抗药性

Abstract: Staphylococcus were isolated from the healthy human skin samples using Baird Parker medium. The taxonomy and phylogenetic relationship of Staphylococcus were analyzed based on the 16S rRNA gene sequences. Antibiotic susceptibility of Staphylococci was detected by B-K method. A total of 31 strains of Staphylococcus were isolated which can be classified into 6 different species. Each of 31 Staphylococcus strains was able to resist to at least one antibiotic among 10 tested antibiotics. The highest resistance rate was found against Amoxicillin and Ampicillin with 91%. Only 3 strains among the isolated Staphylococcus strains were resistant to Amikacin. The results indicated that Staphylococcus strains were abundant in both Uyghur and Han' s skins and the population level of Staphylococcus species was higher in Uyghur human skin samples than in Han' s. Furthermore, our study also suggested that Staphylococcus strains isolated from healthy human skin samples of East China Normal University students had high resistance ability to 10 tested antibiotics.

Key words: skin microenvironment Staphylococci 16S rRNA gene phylogenetic relationship antibiotic susceptibility

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