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研究报告

烟草青枯病拮抗内生细菌的分离、鉴定及其田间防效

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摘要 从病区健康烟草植株茎杆内分离到一株对烟草青枯罗尔氏菌(*Ralstonia solanacarum*)有强拮抗作用的内生细菌, 命名为B-001菌株. 拮抗性研究表明, B-001菌株对多种革兰氏阳性细菌、革兰氏阴性细菌以及病原真菌均有较强的抑制作用. 形态和生理生化特征初步表明菌株B-001为芽孢杆菌属(*Bacillus*)细菌. 经扩增、测序得到B-001的16S rDNA序列, GenBank接收号为DQ444283. 用ClustalX进行多重序列对比, 并通过MEGA3方法构建16S rDNA系统发育树， 表明:菌株B-001与*Bacillus subtilis* (DQ415893)的相似性为99.2%， 并处于同一分支; 结合形态和生理生化指标, 将其鉴定为枯草芽孢杆菌(*B. subtilis*). 2005和2006年在湖南省桂阳县、宁乡县进行了田间试验， 防效在40.03%～78.14%, 防治效果良好, 且明显优于农用链霉素.

关键词 内生细菌 鉴定 烟草青枯病 田间防效

分类号

Isolation, identification and field control efficacy of an endophytic strain against tobacco bacterial wilt (*Ralstonia solanacarum*)

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Abstract

In this paper, an endophytic strain B-001 against tobacco bacterial wilt (*Ralstonia solanacarum*) was isolated from the stem of healthy tobacco in *R. solanacarum*-infected fields, which had a stronger inhibitory effect on some kinds of gram-positive bacteria, gram-negative bacteria, and pathogenic fungi. This strain belonged to *Bacillus*, and its 16S rDNA after PCR and sequencing had an accession of GenBank being DQ444283. The 16S rDNA phylogenetic tree was constructed with MEGA3, and compared with the published 16S rDNA sequences of relative bacteria species. B-001 had a 99.2% sequence similarity with *Bacillus subtilis* (DQ415893). According to the morphological, physiological and biochemical characteristics, and based on phylogenetic analysis, B-001 was identified as a strain of *B. subtilis*. Field experiments in Guiyang and Ningxiang counties of Hunan Province showed that in 2005 and 2006, the control efficacy of B-001 on *R. solanacarum* ranged from 40.03% to 78.14%, better than that of *Streptomycini*.

Key words endophytic bacteria identification tobacco bacterial wilt (*Ralstonia solanacarum*) field control efficacy

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