



PEG介导的棉花枯萎病菌原生质体转化体系的建立

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Protoplast Transformation of *Fusarium oxysporum* f.sp. *vasinfectum* Mediated by Polyethylene Glycol

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摘要

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摘要 通过酶解尖孢镰刀菌萎蔫专化型 (*Fusarium oxysporum* f. sp. *vasinfectum*) FOV1和FOV4菌株幼嫩菌丝的细胞壁产生原生质体, PEG8000介导外源DNA随机插入的方法, 分别获得具有抗潮霉素及荧光信号的转化子27个和39个, 转化效率(以单位质量的DNA的转化子数计)分别为1350 mg⁻¹和1950 mg⁻¹。选取FOV1和FOV4菌株的代表性转化子各3株, 经过5代继代培养后, 其产孢量、荧光稳定性和致病性均无明显变化。因此, 可以认为棉花枯萎病菌原生质体的这种转化方法是一种比较稳定高效的遗传转化体系。

关键词: GFP 尖孢镰刀菌 原生质体 转化 荧光信号检测

Abstract: The cell walls of young hypha of *Fusarium oxysporum* f.sp. *vasinfectum*(FOV) FOV1 and FOV4 strains were lysed with enzymes to generate protoplasts, which were used to insert the exogenous DNA randomly under PEG8000 mediated transformation. Twenty seven and thirty nine transformants of FOV1 and FOV4 that showed hygromycin resistance and fluorescence signal were obtained, respectively. The transformation frequency of FOV1 was 1350 transformants per mg DNA and that of FOV4 was 1950 transformants per mg DNA. Three representative transformants of FOV1 and FOV4 were tested for their sporulation, fluorescence stability, and pathogenicity during five generations of sub-culture, and none of the transformants showed significant changes over this time. Therefore, the protoplast transformation is a stable and efficient genetic transformation method for FOV.

Keywords: GFP *Fusarium oxysporum* protoplast transformation fluorescence signal detection

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