

农业生物技术科学

Ri质粒介导双价抗真菌病基因转化番茄的初步研究

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摘要:

以番茄新品种T431、1911、0701为材料, 以9天苗龄的叶片为受体, 通过农杆菌Ri质粒介导, 将几丁质酶基因和 β -1, 3葡聚糖酶基因转化番茄。共获得再生植株100株, 经PCR技术检测, 导入几丁质酶基因和 β -1, 3葡聚糖酶基因的植株分别为27株和13株, 转化率为27% 和13%; 两个目的基因同时导入的植株10株, 转化率为10%。PCR-Southern检测呈阳性, 表明外源基因已经整合到番茄基因组中。对9株双转化的植株进行RT-PCR检测, 几丁质酶基因和 β -1, 3葡聚糖酶基因的阳性植株分别为5株和4株, 证明转化的基因已表达。

关键词: 转化植株

Study on Genetic Transformation of Tomato Expressing Bivalent Anti-fungal Disease Gene Mediated by Ri Plasmid

Abstract:

New tomato varieties T431, 1911 and 0701 were used as the materials, chitinase gene and β -1,3-glucanase gene were transformed into tomatoes by Agrobacterium-mediated transformation. A total of 100 regeneration plants were obtained. In these regenerated plants, 27 and 13 plants appeared respectively to be positive in PCR test with chitinase gene and β -1,3-glucanase gene primer. The transferring frequency of foreign gene was 27% and 13% separately. If the two genes were done simultaneously, 10 plants appeared to be positive in PCR test with a transferring frequency of 10%. PCR-Southern analysis of these plants showed that they produced positive hybridization, indicating that the chitinase gene and β -1,3-glucanase gene have been conveyed and integrated into genome of these plants. 9 plants chosen from double-gene transgenic plants were taken RT-PCR analysis, 5 and 4 plants appeared respectively to be positive in 9 plants, which proved that the chitinase gene and β -1,3-glucanase gene acquired stable expression in transgenic plants.

Keywords: transformed plant

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