

عنوان مقاله:

Biolistic co-transformation of rice using gold nanoparticles

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خلاصه مقاله:

**ABSTRACT-** In order to produce transgenic rice lines lacking selectable marker gene, biolistic co-transformation technique using gold nanoparticles was adopted. In the first step, the efficiency of different sizes of gold particles was evaluated. The results showed that the efficiency of the nanoparticles in the transformation was comparable to that of the micro particles. Subsequently, two separate plasmids including p UBC harboring cry IA (c) gene and pTRA132 carrying hph gene as selectable marker gene were mixed and coated with gold nanoparticles. Embryo genic calli originated from mature rice seeds were targeted with plasmid-coated nan projectiles. Putative transgenic cells were selected from selection media after three subcultures in MS medium were supplemented with 50 mg hygromycin B l-1 in three weeks' intervals. The selected calli were then grown into putative transgenic plantlets. Molecular analysis performed on the regenerated lines showed that at least one copy of both genes was inserted into the genome of some transgenic lines. RT-PCR analysis also confirmed successful transcription of the cry IA (c) gene. Accordingly, it could be concluded that the biolistic co-transformation method using gold nanoparticles could be a successful method for gene delivery into rice varieties. Nevertheless, expression of cry IA (c) gene and loci of both genes should still be investigated in future studies

کلمات کلیدی:

Keywords: Biolistic, Co-transformation, cryIA(c), gold nanoparticles, Rice

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